en

# User Manual

## Reversible air / water "Split Inverter" heat pump

### Single unit Alezio

MIV-4/E 4–8 V200
MIV-4/E 11–16 V200
MIV-4/H 4–8 V200
MIV-4/H 11–16 V200

SOLAR
SOLID FUEL
HEAT PUMPS
CONDENSING OIL/GAS

De Dietrich
Sustainable Comfort®

# Dear customer,

Thank you for purchasing this appliance.

Please read this manual carefully before using the product and keep it in a safe place for future reference.

In order to ensure continued safe and efficient operation we recommend that the product is regularly maintained. Our Service and After Sales organization can assist with this.

We hope you will receive many years of satisfactory service.

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# 1 Safety

## 1.1 General safety instructions

**Note**
This appliance is not intended to be used by persons (including children) whose physical, sensory or mental capacity is impaired or persons with no experience or knowledge, unless they have the benefit, through the intermediary of a person responsible for their safety, of supervision or prior instructions regarding use of the appliance. Care should be taken to ensure that children do not play with the appliance.

**Danger of electric shock**
Before any work, switch off all electricity supplies.

**Caution**
Installation of the heat pump must be done by a qualified professional in accordance with prevailing local and national regulations.

**Warning**
Do not touch the refrigeration connection pipes with your bare hands while the heat pump is running. Danger of burn or frost injury.

**Warning**
Do not touch the radiators for long periods. Depending on the heat pump settings, the temperature of the radiators may exceed 60°C.

**Warning**
In order to limit the risk of being scalded, the installation of a thermostatic mixing valve on the domestic hot water flow pipes is obligatory.
Take precautions with the domestic hot water. Depending on the heat pump settings, the domestic hot water temperature may exceed 65°C.

**Caution**
Only genuine spare parts may be used.

**Warning**
Only qualified professionals are authorised to work on the domestic hot water tank and the heating installation.

**Note**
Insulate the pipes to reduce heat losses to the minimum.

**Caution**
The system must satisfy each point in the rules in force in the country that govern works and interventions in individual homes, blocks of flats or other buildings.

**Note**
Heating water and domestic water must not come into contact with each other.

**Note**
Allow the space required to install the appliance correctly: refer to the chapter Dimensions of the Appliance (Installation and Service Manual).

**Caution**

### Refrigerant safety

**Danger**
In the event of a refrigerant leakage:
1. Switch off the appliance.
2. Open the windows.
3. Do not use a naked flame, do not smoke, do not operate electrical contacts.
4. Avoid contact with the refrigerant. Danger of frost injuries.
5. Evacuate the property.
6. Contact a qualified professional.

### Hydraulic safety

**Caution**
The appliance is intended to be permanently connected to the domestic water mains network.

**Caution**
Respect the minimum and maximum water inlet pressure to ensure correct operation of the appliance: refer to the chapter Technical Specifications.

**Caution**
Draining the appliance:
1. Shut off the domestic cold water inlet.
2. Open a hot water tap in the installation.
3. Open a valve on the safety unit.
4. When the water stops flowing, the appliance has been drained.

**Note**
For the domestic hot water operating temperature limits: refer to the chapter Technical Data, Domestic Hot Water Tank.

**Note**
Setting the domestic hot water temperature set point: refer to the chapter "Setting the domestic hot water temperature set point".

**Caution**
Pressure limiter device: refer to the chapter Special precautions to be taken when connecting the domestic hot water circuit (Installation and Service Manual).
- The pressure limiter device (safety valve or safety unit) must be regularly operated in order to remove limescale deposits and ensure that it is not blocked.
- A pressure limiter device must be fitted to a discharge pipe.
- As water may flow out of the discharge pipe, the pipe must be kept open to the open air, in a frost-free environment, and at a continuous downward gradient.

**Caution**
A pressure reducer (not provided) is required when the supply pressure exceeds 80% of the safety valve or safety unit calibration and must be located upstream of the appliance.

**Caution**
There must be no cut-off devices between the safety valve or unit and the domestic hot water tank.

### Electrical safety

**Caution**
A disconnection device must be fitted to the permanent pipes in accordance with installation rules.

**Caution**
If a power cord comes with the appliance and it turns out to be damaged, it must be replaced by the manufacturer, its after sales service or persons with similar qualifications in order to obviate any danger.

**Caution**
Install the appliance in accordance with national rules on electrical installation.

**Caution**
If the appliance is not wired in the factory, carry out the wiring according to the wiring schematics described in the chapter Electrical Connections (Installation and Service Manual).

**Caution**
This appliance must be connected to the protective earth.
Earthing must comply with prevailing installation standards.
Earth the appliance before making any electrical connections.
Type and calibre of the protective equipment: refer to the chapter Recommended cable cross-sections (Installation and Service Manual).

**Caution**
To connect the appliance to the mains electricity, refer to the chapter Electrical Connections (Installation and Service Manual).

**Caution**
This appliance must not be powered through an external switch, such as a timer, or be connected to a circuit which is regularly switched on and off by the electricity provider.

**Note**
The Installation Manual for the appliance is also available on our internet site.

## 1.2 Recommendations

**Caution**
Install the heat pump's indoor module in a frost-free location.

**Caution**
To enjoy warranty cover, no modifications must be made to the appliance.

**Note**
Only qualified persons are authorised to assemble, install and maintain the installation.

**Caution**
Maintenance work must be carried out by a qualified professional.

**Caution**
After maintenance or repair work, check the entire heating installation to ensure that there are no leaks.

**Caution**
Only qualified professionals may carry out electrical connections, always with the power off.

**Caution**
Separate the very low voltage cables from the 230/400 V circuit cables.

**Note**
The frost protection function does not work if the heat pump is switched off.

**Caution**
If the home is unoccupied for a long period and there is a risk of frost, drain the indoor module and the heating system.

**Note**
Keep the heat pump accessible at all times.

**Note**
Never remove or cover labels and data plates affixed to the appliances. Labels and data plates must be legible throughout the entire lifetime of the appliance. Immediately replace damaged or illegible instructions and warning stickers.

**Note**
Remove the casing only to perform maintenance and repair work. Put the casing back in place after maintenance and repair work.

**Caution**
Give preference to the or mode rather than switching off the system to leave the following functions running:
- Anti blocking of pumps
- Frost Protection

**Note**
Regularly check the presence of water and pressure in the heating installation.

**Note**
Keep this document close to the place where the appliance is installed.

**Caution**
Do not make any modifications to the heat pump without the written consent of the manufacturer.

**Caution**
Do not neglect to service the heat pump. Contact a qualified professional or subscribe to a maintenance contract for the annual servicing of the heat pump.

## 1.3 Specific safety instructions

**Warning**
Refrigerant fluid and pipes:
- Use only **R410A** refrigerant fluid to fill the installation.
- Use tools and pipe components especially designed for use with **R410A** refrigerant fluid.
- Use copper pipes deoxidised with phosphorus to carry the refrigerant fluid.
- Store the refrigerant connection pipes away from dust and humidity (risk of damage to the compressor).
- Do not use a load cylinder.
- Protect the heat pump components, including the insulation and structural elements. Do not overheat the pipes as brazed components may cause damage.
- Contact between the refrigerant fluid and a flame may result in emissions of toxic gases.

### 1.3.1 Refrigerant fluid R410A

**Hazard identification**
Effects harmful to health:
- The vapours are heavier than air and may lead to asphyxia owing to reduced oxygen levels.
- Liquefied gas: contact with the liquid may cause serious frost burn and eye injuries.
- Product classification: this product is not classified as a "hazardous preparation" according to European Union regulations.

If the R410A refrigerant is mixed with air, it may cause pressure surges in the refrigeration pipes and lead to an explosion and other hazards.

**Composition of / Information on the ingredients**
Chemical nature: R-410A is composed of Difluoromethane R32 and Pentafluoroethane R125

Tab.1 Composition of R-410A fluid

| Name | Proportion | Number CE | Number CAS |
|---|---|---|---|
| Difluoromethane R32 | 50% | 200–839–4 | 75-10-5 |
| Pentafluoroethane R125 | 50% | 206-557-8 | 354-33-6 |

The Global-Warming Potential of R410A gas is 2087.5.

Tab.2 Precautions for use

| | |
|---|---|
| **First aid** | **If inhaled:**<br>• Evacuate the subject from the contaminated area and take him into the open air.<br>• If feeling unwell: call a doctor.<br>**In the event of contact with the skin:**<br>• Treat frost injuries like burns. Rinse with copious amounts of tepid water, do not remove clothing (risk of adhesion to the skin).<br>• If skin burns appear, call a doctor immediately.<br>**In the event of contact with the eyes:**<br>• Rinse immediately with water, holding the eyelids well apart (for at least 15 minutes).<br>• Consult an ophthalmologist immediately. |
| **Fire prevention measures** | • **Appropriate extinguishing agents:** All extinguishing agents can be used.<br>• Inappropriate extinguishing agents: none to our knowledge. In the event of fire nearby, use the appropriate extinguishing agents.<br>• Specific hazards:<br>- Rise in pressure: in the presence of air, an inflammable mixture may form under certain temperature and pressure conditions.<br>- Toxic and corrosive vapours may be released by the effect of the heat.<br>• Special intervention methods: cool the volumes exposed to heat with water spray.<br>• Protection of the firemen:<br>- Full self-contained breathing apparatus.<br>- Complete body protection. |
| **In the event of accidental spillage** | Individual precautions:<br>• Avoid contact with the skin and eyes.<br>• Do not intervene without appropriate protective equipment.<br>• Do not inhale the vapours.<br>• Evacuate the hazardous area.<br>• Stop the leakage.<br>• Eradicate all sources of ignition.<br>• Ventilate the spillage area mechanically.<br>Cleaning / decontamination: allow any residual product to evaporate.<br>**In the event of contact with the eyes:** Rinse immediately with water, holding the eyelids well apart (for at least 15 minutes). Consult an ophthalmologist immediately. |
| **Handling** | • Technical measures: ventilation<br>• Precautions to be taken:<br>- No smoking.<br>- Prevent the build-up of electrostatic charges.<br>- Work in a well ventilated place. |
| **Personal protection** | • Respiratory protection:<br>- If ventilation is insufficient: AX type cartridge mask.<br>- In confined spaces: self-contained breathing apparatus.<br>• Hand protection: protective gloves in leather or nitrile rubber.<br>• Eye protection: safety glasses with side protection.<br>• Skin protection: clothing made principally of cotton<br>• Industrial hygiene: do not drink, eat or smoke at the place of work. |

| | |
|---|---|
| **Considerations on disposal** | **Note**<br>Disposal must be done in compliance with prevailing local and national regulations.<br>• Product waste: consult the manufacturer or the supplier for information on recovery or recycling.<br>• Soiled packaging: reuse or recycle after decontamination. Destroy in authorised installations. |
| **Regulation** | • European Regulation No. EC 842/2006: fluorinated greenhouse gases under the Kyoto Protocol. |

## 1.4 Liabilities

### 1.4.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various Directives applicable. They are therefore delivered with the CE marking and any documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.

Our liability as manufacturer may not be invoked in the following cases:
- Failure to abide by the instructions on installing the appliance.
- Failure to abide by the instructions on using the appliance.
- Faulty or insufficient maintenance of the appliance.

### 1.4.2 Installer's liability

The installer is responsible for the installation and initial commissioning of the appliance. The installer must abide by the following instructions:
- Read and follow the instructions given in the manuals provided with the appliance.
- Install the appliance in compliance with prevailing legislation and standards.
- Carry out initial commissioning and any checks necessary.
- Explain the installation to the user.
- If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order.
- Give all the instruction manuals to the user.

### 1.4.3 User's liability

To guarantee optimum operation of the system, you must abide by the following instructions:
- Read and follow the instructions given in the manuals provided with the appliance.
- Call on a qualified professional to carry out installation and initial commissioning.
- Get your installer to explain your installation to you.

- Have the required inspections and maintenance carried out by a qualified installer.
- Keep the instruction manuals in good condition close to the appliance.

# 2 About this manual

## 2.1 General

This manual is intended for the user of a MIV-4 heat pump. This manual can also be found on our internet site.

## 2.2 Symbols used

### 2.2.1 Symbols used in the manual

This manual uses various danger levels to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation of the appliance.

**Danger**
Risk of dangerous situations that may result in serious personal injury.

**Danger of electric shock**
Risk of electric shock.

**Warning**
Risk of dangerous situations that may result in minor personal injury.

**Caution**
Risk of material damage.

**Note**
Please note: important information.

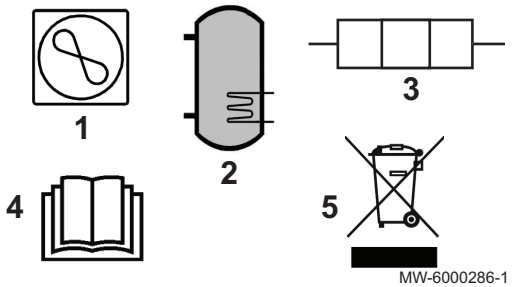
**See**
Reference to other manuals or pages in this manual.

### 2.2.2 Symbols used on the appliance

Fig.1 Symbols used on the appliance

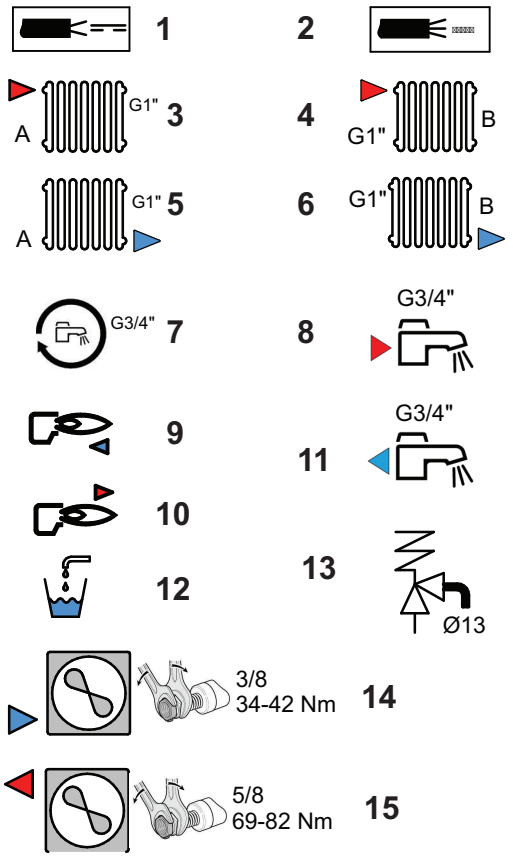
1 Alternating current
2 Protective earthing

Fig.2 Symbols used on the data plate




1 Information on the heat pump: type of refrigerant fluid, maximum operating pressure and output absorbed by the indoor module
2 Information on the domestic hot water tank: volume, maximum operating pressure and standby losses of the domestic hot water tank
3 Information on the electrical back-up: power supply and maximum output (only for versions with electrical back-up)
4 Before installing and commissioning the appliance, carefully read the instruction manuals provided
5 Dispose of used products in an appropriate recovery and recycling structure

Fig.3 Symbols used on the connection label




1 Sensor cable - low voltage
2 Power cord 230 V
3 Heating circuit flow
4 Circuit B flow
5 Heating circuit return
6 Circuit B return (optional)
7 Connection for recirculation
8 Domestic hot water outlet
9 Flow to boiler back-up (only for versions with hydraulic back-up)
10 Return from boiler back-up (only for versions with hydraulic back-up)
11 Domestic cold water inlet
12 Drain valve
13 Safety valve
14 $^{3}/_{8}$" refrigerant fluid connection - liquid line
15 $^{5}/_{8}$" refrigerant fluid connection - gas line

# 3 Technical specifications

## 3.1 Homologations

### 3.1.1 Directives

This product complies with the requirements of the following European Directives and Standards:

- Low Voltage Directive 2006/95/EC
  Generic standard: IEC/EN 60335–1
  Relevant Standard: IEC/EN 60335–2–40
- Electromagnetic Compatibility Directive 2004/108/EC
  Generic standards: IEC/EN 61000-6-3, IEC/EN 61000-6-1
  Relevant Standard: IEC/EN 55014

This product conforms to the requirements of European Directive 2009/125/EC on the ecodesign of energy-related products.

In addition to the legal requirements and guidelines, the supplementary guidelines in this manual must also be followed. Supplements or subsequent regulations and guidelines that are valid at the time of installation shall apply to all regulations and guidelines specified in this manual.

## 3.2 Technical data

### 3.2.1 Heat pump

Maximum operating pressure: 0.3 MPa (3 bar)

Tab.3 Conditions of use

| | Water (°C) | Outside air (°C) |
|---|---|---|
| Limit operating temperatures in heating mode | +18 / +60 | AWHP 4 MR, AWHP 6 MR-2 : -15 / +35<br>Other models: -20 / +35 |
| Limit operating temperatures in cooling mode | +7 / +25 | +7 / +40 |

Tab.4 Heating mode: outside air temperature +7°C, water temperature at the outlet +35°C. Performances in accordance with EN 14511-2.

| Measurement type | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Heat output | kW | 3.94 | 5.73 | 8.26 | 11.39 | 11.39 | 14.65 | 14.65 |
| Coefficient of performance (COP) | | 4.53 | 4.04 | 4.27 | 4.65 | 4.65 | 4.22 | 4.22 |
| Absorbed electrical power | kWe | 0.87 | 1.42 | 1.93 | 2.45 | 2.45 | 3.47 | 3.47 |
| Nominal amperage | A | 4.11 | 6.57 | 8.99 | 11.41 | 3.8 | 16.17 | 5.39 |
| Nominal water flow rate (ΔT = 5K) | $m^3$/hour | 0.68 | 0.99 | 1.42 | 1.96 | 1.96 | 2.53 | 2.53 |

Tab.5 Heating mode: outside air temperature +2°C, water temperature at the outlet +35°C. Performances in accordance with EN 14511-2.

| Measurement type | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Heat output | kW | 3.76 | 3.19 | 5.30 | 10.19 | 10.19 | 12.90 | 12.90 |

| Measurement type | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Coefficient of performance (COP) | | 3.32 | 2.97 | 3.46 | 3.20 | 3.20 | 3.27 | 3.27 |
| Absorbed electrical power | kWe | 1.13 | 1.08 | 1.53 | 3.19 | 3.19 | 3.94 | 3.94 |

Tab.6 Cooling mode: outside air temperature +35°C, water temperature at the outlet +18°C. Performances in accordance with EN 14511-2.

| Measurement type | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Cooling output | kW | 3.84 | 4.69 | 7.90 | 11.16 | 11.16 | 14.46 | 14.46 |
| Energy efficiency ratio (EER) | | 4.83 | 4.09 | 3.99 | 4.75 | 4.75 | 3.96 | 3.96 |
| Absorbed electrical power | kWe | 0.72 | 1.15 | 2.00 | 2.35 | 2.35 | 3.65 | 3.65 |
| Nominal amperage | A | 3.40 | 5.43 | 9.40 | 11.05 | 3.68 | 17.15 | 5.71 |

Tab.7 Common specifications

| Measurement type | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Total dynamic head at nominal flow rate | kPa | 58 | 49 | 29 | 11 | 11 | 35 | 35 |
| Nominal air flow rate | $m^3$/hour | 2100 | 2100 | 3300 | 6000 | 6000 | 6000 | 6000 |
| Power voltage of the outdoor unit | V | 230 | 230 | 230 | 230 | 400 | 230 | 400 |
| Start-up amperage | A | 5 | 5 | 5 | 5 | 3 | 6 | 3 |
| Maximal amperage | A | 13 | 13 | 19 | 29.5 | 13 | 29.5 | 13 |
| Acoustic power - Inside (1) | dB(A) | 52.9 | 52.9 | 53.3 | 53.3 | 53.3 | 53.3 | 53.3 |
| Acoustic power - Outside (1) | dB(A) | 62.4 | 64.8 | 65.2 | 68.8 | 68.8 | 68.5 | 68.5 |
| Acoustic pressure (2) | dB(A) | 41.7 | 41.7 | 43.2 | 43.4 | 43.4 | 47.4 | 47.4 |
| Refrigerant fluid R410A | kg | 2.1 | 2.1 | 3.2 | 4.6 | 4.6 | 4.6 | 4.6 |
| Refrigeration connection (Liquid/Gas) | inch | 1/4 - 1/2 | 1/4 - 1/2 | 3/8 – 5/8 | 3/8 – 5/8 | 3/8 – 5/8 | 3/8 – 5/8 | 3/8 – 5/8 |

| Measure-ment type | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Max. pre-loaded length | m | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| (1) Noise radiated by the envelope - Test run in accordance with the NF EN 12102 standard, temperature conditions: air 7°C, water 55°C<br>(2) at 5 m from the appliance, free field | | | | | | | | |

### 3.2.2 Domestic hot water tank

Tab.8 Technical specifications primary circuit (heating water)

| Specification | Unit | Value |
|---|---|---|
| Maximum operating temperature - Version with hydraulic back-up | °C | 90 |
| Maximum operating temperature - Version with electrical back-up | °C | 75 |
| Minimum operating temperature | °C | 7 |
| Maximum operating pressure | MPa (bar) | 0.3 (3.0) |
| Exchanger capacity | Litres | 11.3 |
| Exchange surface | m² | 1.7 |

Tab.9 Technical specifications secondary circuit (domestic water)

| Specification | Unit | Value |
|---|---|---|
| Maximum operating temperature | °C | 80 |
| Minimum operating temperature | °C | 10 |
| Maximum operating pressure | MPa (bar) | 1.0 (10.0) |
| Water capacity | Litres | 177 |

Tab.10 Common specifications

| AWHP/AWHP-V220 | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2<br>AWHP 11 TR-2 | AWHP 16 MR-2<br>AWHP 16 TR-2 |
|---|---|---|---|---|---|
| Loading time (1) | 1 hour 54 minutes | 1 hour 41 minutes | 2 hours 11 minutes | 1 hour 33 minutes | 1 hour 11 minutes |
| Coefficient of performance domestic hot water ($COP_{DHW}$) (2) | 2.45 | 2.29 | 2.47 | 2.34 | 2.27 |
| (1) ΔT = 55 K. Outside temperature: 7°C. Inside air temperature: 20°C<br>(2) According to the standard EN16147 | | | | | |

### 3.2.3 Weight

Tab.11 Indoor module

| Weight (empty) | Unit | MIV-4/E 4–8 V200 | MIV-4/E 11–16 V200 | MIV-4/H 4–8 V200 | MIV-4/H 11–16 V200 |
|---|---|---|---|---|---|
| Indoor module | kg | 131 | 133 | 128 | 130 |

Tab.12 Outside unit

| Weight (empty) | Unit | AWHP 4 MR | AWHP 6 MR-2 | AWHP 8 MR-2 | AWHP 11 MR-2 | AWHP 11 TR-2 | AWHP 16 MR-2 | AWHP 16 TR-2 |
|---|---|---|---|---|---|---|---|---|
| Outside unit | kg | 42 | 42 | 75 | 118 | 130 | 118 | 130 |

### 3.2.4 Combination heaters with medium-temperature heat pump

Tab.13 Technical parameters for heat pump combination heaters (parameters declared for medium-temperature application)

| **Product name** | | | **MIV-4 AWHP 4 MR** | **MIV-4 AWHP 6 MR-2** | **MIV-4 AWHP 8 MR-2** |
|---|---|---|---|---|---|
| Air-to-water heat pump | | | Yes | Yes | Yes |
| Water-to-water heat pump | | | No | No | No |
| Brine-to-water heat pump | | | No | No | No |
| Low-temperature heat pump | | | No | No | No |
| Equipped with a supplementary heater | | | Yes | Yes | Yes |
| Heat pump combination heater | | | Yes | Yes | Yes |
| **Rated heat output under average conditions**(1) | *Prated* | kW | 3 | 4 | 6 |
| **Rated heat output under colder conditions**(13) | *Prated* | kW | 3 | 4 | 6 |
| **Rated heat output under warmer conditions**(13) | *Prated* | kW | 3 | 5 | 6 |
| **Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$** | | | | | |
| $T_j$ = -7 °C | *Pdh* | kW | 2.9 | 3.5 | 5.6 |
| $T_j$ = +2 °C | *Pdh* | kW | 3.5 | 4.5 | 6.1 |
| $T_j$ = +7 °C | *Pdh* | kW | 3.9 | 4.8 | 6.4 |
| $T_j$ = +12 °C | *Pdh* | kW | 4.8 | 5.2 | 6.7 |
| $T_j$ = bivalent temperature | *Pdh* | kW | 2.8 | 3.6 | 5.6 |
| $T_j$ = operation limit temperature | *Pdh* | kW | 2.8 | 3.6 | 5.6 |
| Bivalent temperature | $T_{biv}$ | °C | -10 | -10 | -10 |
| Degradation coefficient(2) | *Cdh* | — | 1.0 | 1.0 | 1.0 |
| **Seasonal space heating energy efficiency under average conditions** | $\eta_s$ | % | 150 | 137 | 136 |
| **Seasonal space heating energy efficiency under colder conditions** | $\eta_s$ | % | 120 | 116 | 119 |
| **Seasonal space heating energy efficiency under warmer conditions** | $\eta_s$ | % | 195 | 172 | 169 |
| **Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature $T_j$** | | | | | |
| $T_j$ = -7 °C | *COPd* | - | 1.82 | 1.89 | 1.95 |
| $T_j$ = +2 °C | *COPd* | - | 3.88 | 3.53 | 3.49 |
| $T_j$ = +7 °C | *COPd* | - | 5.57 | 4.74 | 4.57 |
| $T_j$ = +12 °C | *COPd* | - | 9.33 | 7.08 | 6.33 |
| $T_j$ = bivalent temperature | *COPd* | - | 1.47 | 1.52 | 1.63 |
| $T_j$ = operation limit temperature | *COPd* | - | 1.47 | 1.52 | 1.63 |
| Operation limit temperature for air-to-water heat pumps | *TOL* | °C | -10 | -10 | -10 |
| Heating water operating limit temperature | *WTOL* | °C | 60 | 60 | 60 |
| **Electrical power consumption** | | | | | |
| Off mode | $P_{OFF}$ | kW | 0.009 | 0.009 | 0.009 |
| Thermostat-off mode | $P_{TO}$ | kW | 0.049 | 0.049 | 0.049 |
| Stand-by | $P_{SB}$ | kW | 0.013 | 0.013 | 0.013 |
| Crankcase heater mode | $P_{CK}$ | kW | 0.055 | 0.055 | 0.055 |

| Product name | | | MIV-4 AWHP 4 MR | MIV-4 AWHP 6 MR-2 | MIV-4 AWHP 8 MR-2 |
|---|---|---|---|---|---|
| **Supplementary heater** | | | | | |
| Rated heat output(24) | *Psup* | kW | 0.0 | 0.0 | 0.0 |
| Type of energy input | | | Electricity | Electricity | Electricity |
| **Other characteristics** | | | | | |
| Capacity control | | | Variable | Variable | Variable |
| Sound power level, indoors - outdoors | $L_{WA}$ | dB | 53 – 64 | 53 – 65 | 53 – 65 |
| Annual energy consumption under average conditions | $Q_{HE}$ | kWh | 1489 | 2124 | 3316 |
| Annual energy consumption under colder conditions | $Q_{HE}$ | kWh | 2757 | 3721 | 4621 |
| Annual energy consumption under warmer conditions | $Q_{HE}$ | kWh | 887 | 1492 | 1904 |
| Rated air flow rate, outdoors for air-to-water heat pumps | — | $m^3/h$ | 2100 | 2100 | 3300 |
| **Declared load profile** | | | L | L | L |
| Daily electricity consumption | $Q_{elec}$ | kWh | 4.816 | 4.816 | 4.816 |
| Annual electricity consumption | *AEC* | kWh | 968 | 968 | 968 |
| **Water heating energy efficiency** | $\eta_{wh}$ | % | 106.00 | 106.00 | 106.00 |
| Daily fuel consumption | $Q_{fuel}$ | kWh | 0.000 | 0.000 | 0.000 |
| Annual fuel consumption | *AFC* | GJ | 0 | 0 | 0 |

(1) The rated heat output *Prated* is equal to the design load for heating *Pdesignh*, and the rated heat output of a supplementary heater *Psup* is equal to the supplementary capacity for heating *sup(Tj)*.
(2) If *Cdh* is not determined by measurement, the default degradation coefficient is *Cdh* = 0.9.

Tab.14 Technical parameters for heat pump combination heaters (parameters declared for medium-temperature application)

| Product name | | | MIV-4 AWHP 11 MR-2 | MIV-4 AWHP 16 MR-2 |
|---|---|---|---|---|
| Air-to-water heat pump | | | Yes | Yes |
| Water-to-water heat pump | | | No | No |
| Brine-to-water heat pump | | | No | No |
| Low-temperature heat pump | | | No | No |
| Equipped with a supplementary heater | | | Yes | Yes |
| Heat pump combination heater | | | Yes | Yes |
| **Rated heat output under average conditions**(1) | *Prated* | kW | 6 | 8 |
| **Rated heat output under colder conditions**(13) | *Prated* | kW | 4 | 7 |
| **Rated heat output under warmer conditions**(13) | *Prated* | kW | 8 | 13 |
| **Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$** | | | | |
| $T_j$ = -7 °C | *Pdh* | kW | 6.8 | 9.0 |
| $T_j$ = +2 °C | *Pdh* | kW | 8.2 | 11.9 |
| $T_j$ = +7 °C | *Pdh* | kW | 9.0 | 12.9 |
| $T_j$ = +12 °C | *Pdh* | kW | 10.1 | 15.4 |
| $T_j$ = bivalent temperature | *Pdh* | kW | 6.2 | 8.3 |
| $T_j$ = operation limit temperature | *Pdh* | kW | 6.2 | 8.3 |
| Bivalent temperature | $T_{biv}$ | °C | -10 | -10 |
| Degradation coefficient(2) | *Cdh* | — | 1.0 | 1.0 |

| Product name | | | MIV-4 AWHP 11 MR-2 | MIV-4 AWHP 16 MR-2 |
|---|---|---|---|---|
| **Seasonal space heating energy efficiency under average conditions** | $\eta_s$ | % | 132 | 130 |
| **Seasonal space heating energy efficiency under colder conditions** | $\eta_s$ | % | 113 | 113 |
| **Seasonal space heating energy efficiency under warmer conditions** | $\eta_s$ | % | 167 | 161 |
| **Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature $T_j$** | | | | |
| $T_j$ = -7 °C | *COPd* | - | 1.82 | 1.88 |
| $T_j$ = +2 °C | *COPd* | - | 3.43 | 3.33 |
| $T_j$ = +7 °C | *COPd* | - | 4.54 | 4.34 |
| $T_j$ = +12 °C | *COPd* | - | 6.24 | 5.82 |
| $T_j$ = bivalent temperature | *COPd* | - | 1.45 | 1.54 |
| $T_j$ = operation limit temperature | *COPd* | - | 1.45 | 1.54 |
| Operation limit temperature for air-to-water heat pumps | *TOL* | °C | -10 | -10 |
| Heating water operating limit temperature | *WTOL* | °C | 60 | 60 |
| **Electrical power consumption** | | | | |
| Off mode | $P_{OFF}$ | kW | 0.009 | 0.009 |
| Thermostat-off mode | $P_{TO}$ | kW | 0.049 | 0.049 |
| Stand-by | $P_{SB}$ | kW | 0.013 | 0.013 |
| Crankcase heater mode | $P_{CK}$ | kW | 0.055 | 0.055 |
| **Supplementary heater** | | | | |
| Rated heat output(24) | *Psup* | kW | 0.0 | 0.0 |
| Type of energy input | | | Electricity | Electricity |
| **Other characteristics** | | | | |
| Capacity control | | | Variable | Variable |
| Sound power level, indoors - outdoors | $L_{WA}$ | dB | 53 – 69 | 53 – 69 |
| Annual energy consumption under average conditions | $Q_{HE}$ | kWh | 3783 | 5184 |
| Annual energy consumption under colder conditions | $Q_{HE}$ | kWh | 3804 | 5684 |
| Annual energy consumption under warmer conditions | $Q_{HE}$ | kWh | 2580 | 4120 |
| Rated air flow rate, outdoors for air-to-water heat pumps | — | $m^3/h$ | 6000 | 6000 |
| **Declared load profile** | | | L | L |
| Daily electricity consumption | $Q_{elec}$ | kWh | 4.816 | 4.816 |
| Annual electricity consumption | *AEC* | kWh | 968 | 968 |
| **Water heating energy efficiency** | $\eta_{wh}$ | % | 106.00 | 106.00 |
| Daily fuel consumption | $Q_{fuel}$ | kWh | 0.000 | 0.000 |
| Annual fuel consumption | *AFC* | GJ | 0 | 0 |

(1) The rated heat output *Prated* is equal to the design load for heating *Pdesignh*, and the rated heat output of a supplementary heater *Psup* is equal to the supplementary capacity for heating *sup(Tj)*.
(2) If *Cdh* is not determined by measurement, the default degradation coefficient is *Cdh* = 0.9.

**See**
The back cover for contact details.

### 3.2.5 Circulating pump

**Note**
The benchmark for the most efficient circulating pumps is EEI ≤ 0.20.

# 4 Description of the product

## 4.1 General description

The MIV-4 heat pump comprises:
- an indoor module, including a domestic hot water tank and a control panel.
- A reversible outdoor unit for energy production in heating or cooling mode.

Back-up is possible:
- Either via an immersion heater that can be set to 3, 6 or 9 kW (versions with electrical back-up)
- Or via a gas or oil boiler already in use on the installation (versions with hydraulic back-up).

The indoor module and the outdoor unit are connected by means of refrigerant and electrical connections.

The indoor module handles heating and domestic hot water production.

The system offers the following advantages:
- The heating circuit is housed in the insulated volume within the home.
- Thanks to the **DC inverter** system, the heat pump modulates its output to adapt to the needs of the home.
- The control panel uses the outside sensor to adjust the temperature of the heating circuit according to the outside temperature.
- The steel domestic hot water tank is fitted with a magnesium anode and lined with food quality standard enamel vitrified at 850°C, which protects the tank from corrosion.
- The heat exchanger in the domestic hot water tank is a coil welded inside the tank, made of smooth piping. Its external surface, which comes into contact with drinking water, is enamelled.
- The domestic hot water tank is insulated by Chlorofluorocarbon-free polyurethane foam, which helps to keep heat losses to a minimum.

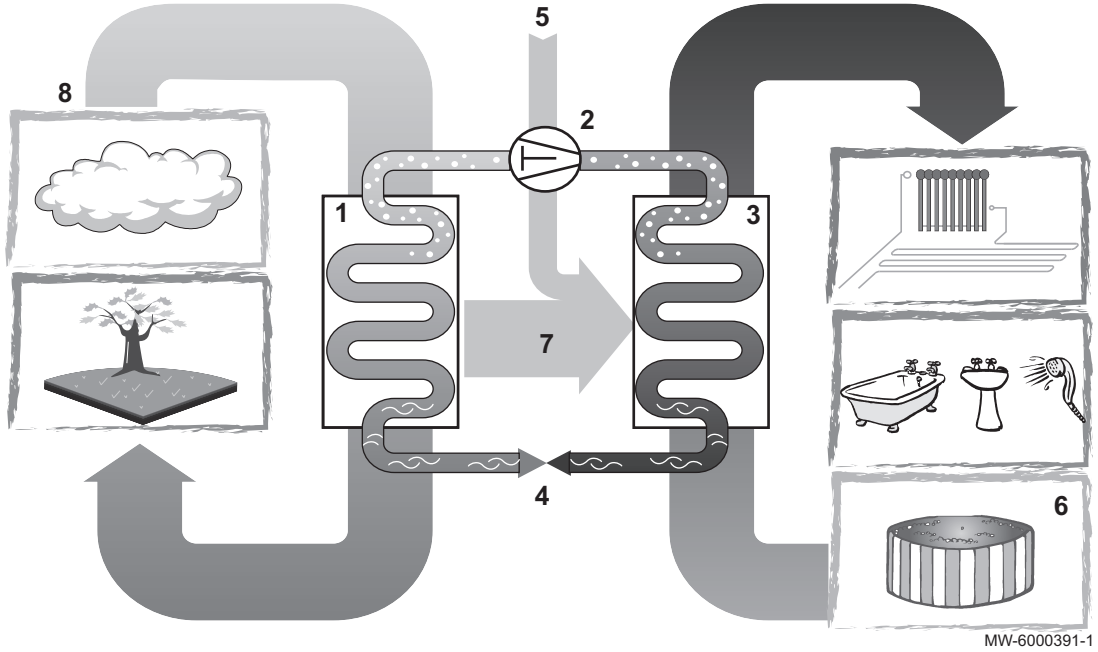
## 4.2 Operating principle

The heat pumps in the MIV-4 range extract the heat found in the air to restore it to the heating and/or domestic hot water circuit via the refrigerant fluid. The efficiency of a heat pump is expressed in the form of a coefficient of performance (COP), defined as the ratio between the heat provided and the power consumed.

The heat pump comprises an evaporator, a compressor, a condenser and an expansion valve. The indoor module includes the condenser. The other components (evaporator, compressor and expansion valve) are located in the outdoor unit.

1. The refrigerant fluid in this circuit is converted from the liquid state to the gaseous state in the evaporator, making it possible to recover heat from the air.
2. The compressor increases the fluid pressure, which thus increases the temperature.
3. In the condenser, the fluid transfers the heat to the heating circuit while converting to the liquid state.
4. The refrigerant passes through the thermostatic expansion valve and returns to the initial state at low pressure and low temperature before returning to the evaporator.

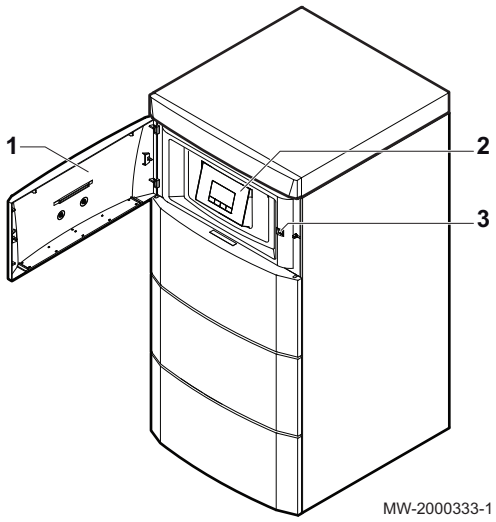
Fig.4 General operating principle




1 Evaporator (fin battery in the outdoor unit)
2 Compressor
3 Condenser (plate exchanger in the indoor module)
4 Electronic expansion valve
5 Electrical energy
6 Heating water
7 Energy flow
8 Heat recovered from the environment

## 4.3 Main components

Fig.5 Main components

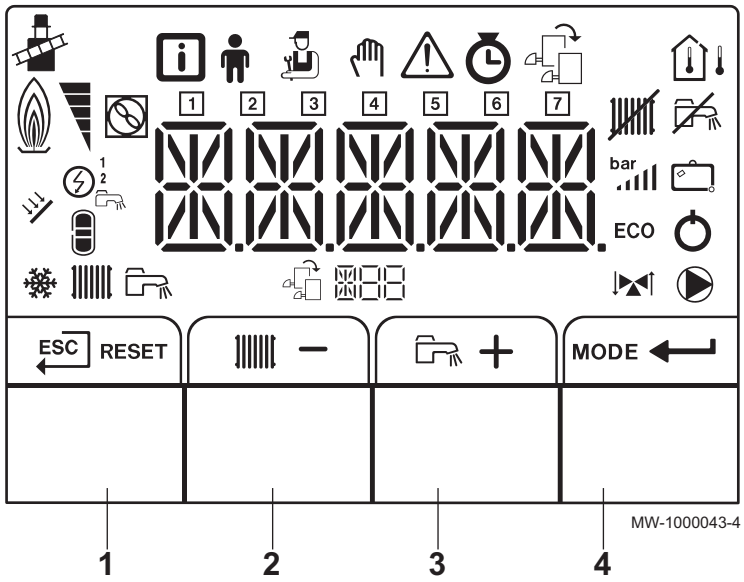



1 Control panel access flap
2 Control panel
3 ON/OFF button

## 4.4 Control panel description

### 4.4.1 Description of the keys

Fig.6 Control panel keys



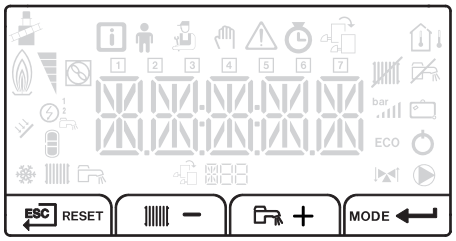

1 **ESC** key (ESC) or **RESET**
2 Key for the heating temperatures or −
3 Key for the domestic hot water temperatures or +
4 **MODE** key or **CONFIRM** (↵)

### 4.4.2 Description of the display

■ **Key functions**

ESC Back to the previous level without saving the modifications made
**RESET** Manual reset
Accessing the heating parameters
− Lowering the value
Accessing the domestic hot water parameters
+ Raising the value
**MODE** MODE display
↵ Accessing the menu selected or confirming the value modification

Fig.7 Function keys

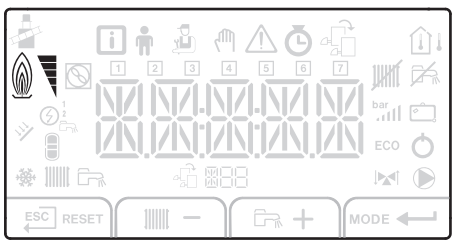



MW-1000082-3

■ **Hydraulic back-up**

Fig.8 Hydraulic back-up

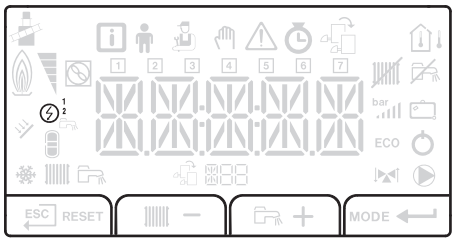
Hydraulic back-up in demand




MW-1000085-2

## Electrical back-up

Fig.9 Electrical back-up

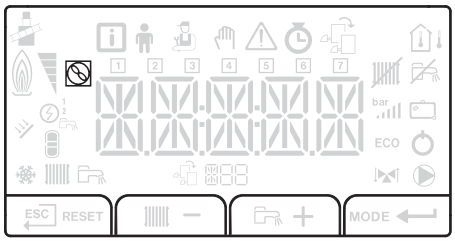



MW-6000364-1

- Stage 1 of the electrical back-up
- Stage 2 of the electrical back-up

## Status of the Compressor

Fig.10 Status of the Compressor

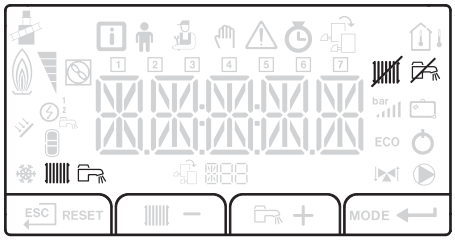



MW-5000012-1

- Steady symbol: compressing running
- Flashing symbol: compressor off and run request pending

## Operating modes

Fig.11 Operating modes

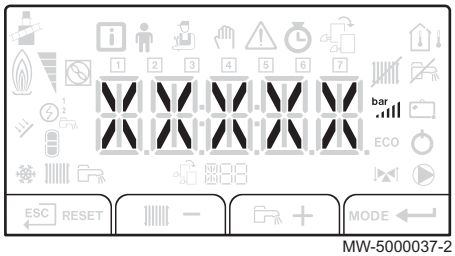



MW-1000083-3

- Steady symbol: heating function enabled
- Flashing symbol: heating production running
- Steady symbol: domestic hot water function enabled
- Flashing symbol: domestic hot water production running
- Heating function disabled
- Domestic hot water function disabled

## Hydraulic pressure in the system

Fig.12 Hydraulic pressure

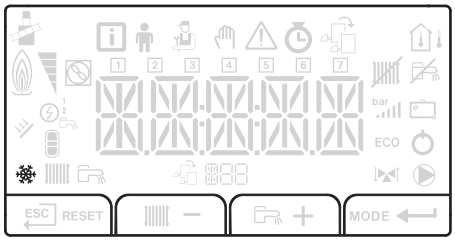



MW-5000037-2

- Steady symbol: displayed when indicating the system's hydraulic pressure value
- Flashing symbol: pressure in the system too low
- XXX Pressure value in the system (in bars)

## Cooling mode

Fig.13 Cooling mode

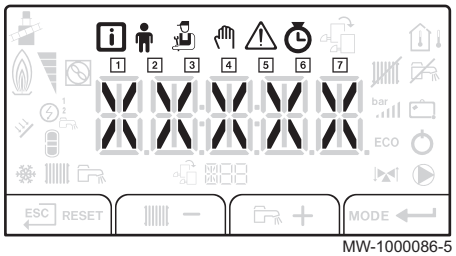



MW-5000015-1

- Steady symbol: cooling mode on
- Flashing symbol: cooling request pending

## Menu display

Fig.14 Menu display




MW-1000086-5

**Information menu**: displays the measured values and the statuses of the appliance

**User menu**: provides access to the User level setting parameters

**Installer menu**: provides access to the Installer level setting parameters

**Manual Forcing menu**: the appliance runs at the set point displayed, the pumps operate and the 3-way valves are not controlled

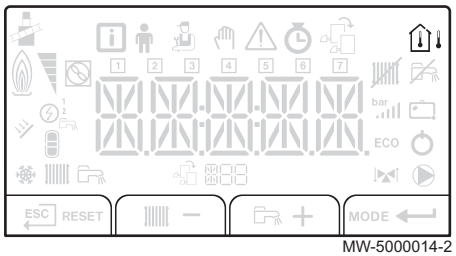
**Malfunction menu**: the appliance has malfunctioned. This information is signalled by an error code and a flashing display

- **Hour run meters menu**
- **Timer Program menu**
- **Clock menu**

1 **Timer program for Mondays**
2 **Timer program for Tuesdays**
3 **Timer program for Wednesdays**
4 **Timer program for Thursdays**
5 **Timer program for Fridays**
6 **Timer program for Saturdays**
7 **Timer program for Sundays**

## Temperature sensors

Fig.15 Temperature sensors




MW-5000014-2

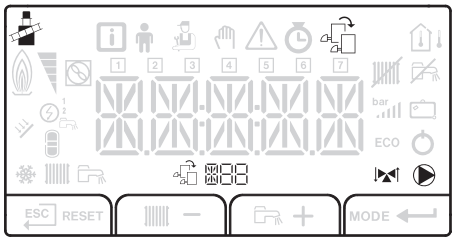
Room temperature sensor connected

Steady symbol: WINTER mode (outside temperature sensor connected)

Flashing symbol: SUMMER mode (outside temperature sensor connected)

## Other Information

Fig.16 Other Information




MW-5000038-2

**Forced start-up**: forced operation in full load mode

Access to information on the additional PCBs

Name of the PCB for which the parameters are displayed

Three-way valve connected

Pump running

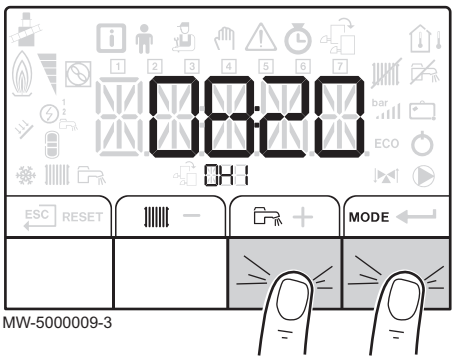
# 5 Operation

## 5.1 Use of the control panel

### 5.1.1 Browsing in the menus

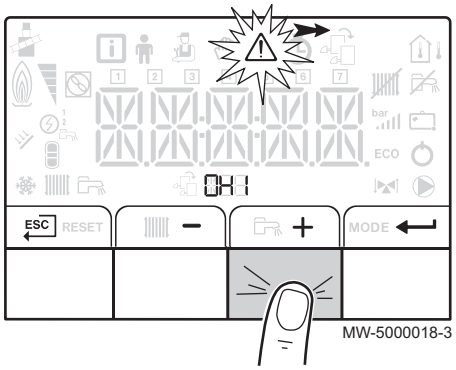
**Note**
The first time a key is pressed, the backlit screen is switched on. The name of the PCB is displayed: check that it is actually the PCB on which the setting must be made.

Fig.17 Accessing the menus



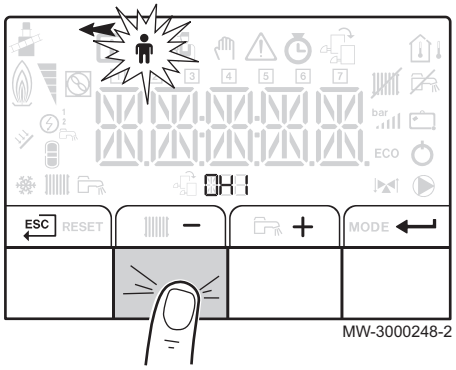

1. To access the menu level, press the two keys on the right simultaneously.
2. To go back to the main display, press the ESC key.

Fig.18 Choosing the menu




**Note**
The + key is used to move to the right.

Fig.19 Choosing the menu

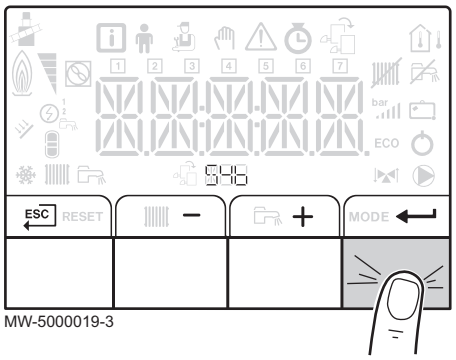



**Note**
The − key is used to move to the left.

To select the desired menu, press the + or − key until the icon for the desired menu flashes.

| | |
|---|---|
| ⓘ | **Information** menu |
| | **User** menu |
| | **Installer** menu |
| | **Forcing Manual mode** |
| ⚠ | **Failure** menu |
| | **Hour run meters** sub-menu<br>**Timer Program** sub-menu<br>**Clock** sub-menu |
| | **The icon is displayed only if an optional PCB has been installed** |

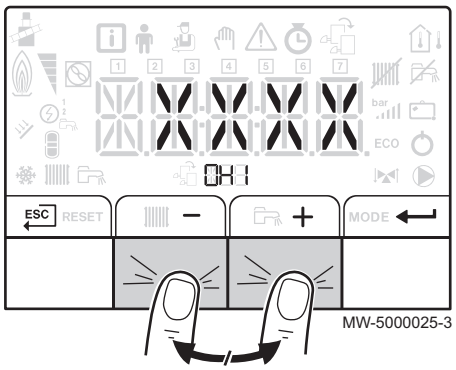
Fig.20 Confirming the menu or parameter




4. To confirm selection of the desired menu, sub-menu or parameter, press the ↵ key.

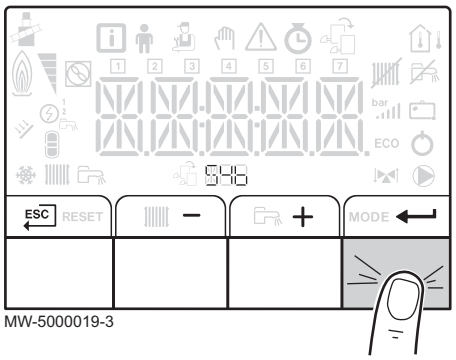
**Note**
If no keys are pressed for 3 minutes, the appliance returns to normal operating mode.
The display disappears after a few seconds' inactivity.

Fig.21 Modifying a value



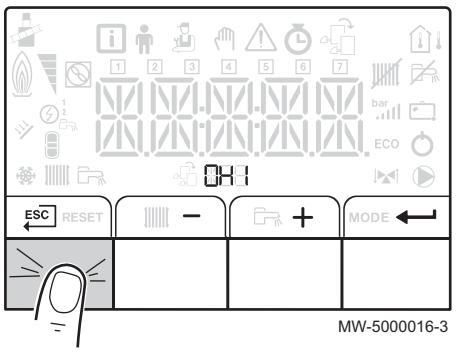

5. To modify the value of a parameter, press the + or − key until the desired value is displayed.

Fig.22 Confirming a new value




6. To confirm a new parameter value, press the ↵ key.

Fig.23 Back to the main display




7. To go back to the main display, press the ESC key.

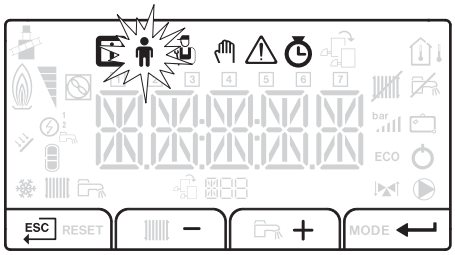
### 5.1.2 Accessing the User menu

The information and settings in the User menu can be accessed by everyone.

**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

1. Access the menus by pressing the two keys on the right simultaneously.
2. Select the User menu by pressing the + or − key until the icon flashes.
3. Press ↵ to access the User menu.

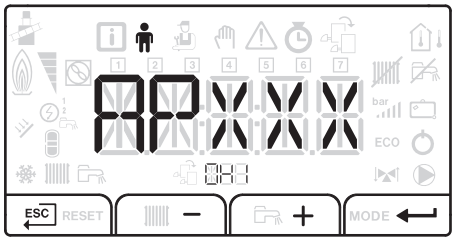
Fig.24 Accessing the User menu




MW-5000008-1

**Note**
The User menu is available only if the icon flashes.

Fig.25 Displaying the parameters of the User menu




MW-5000040-3

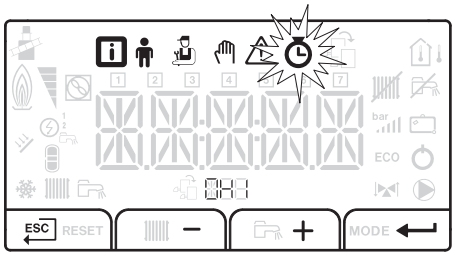
4. Press the + or − key until the desired parameter is displayed. The parameters available to the User are displayed.
5. Go back to the main display by pressing the ESC key.

### 5.1.3 Accessing the Hour Run Meters / Timer Program / Clock sub-menus

**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

1. Access the menus by pressing the two keys on the right simultaneously.
2. Select the menu by pressing the + or − key until the icon flashes. Confirm the selection by pressing the ↵ key.

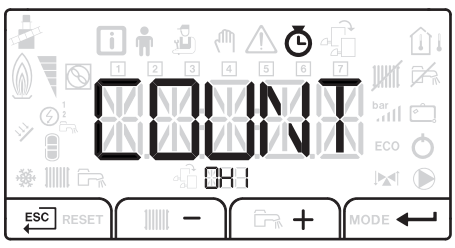
Fig.26 Accessing the Hour Run Meters / Timer Program / Clock sub-menus




MW-5000044-2

**Note**
The Hour Run Meters / Timer Program / Clock sub-menus can be accessed only if the icon flashes.

Fig.27 Displaying the parameters of the Hour Run Meters sub-menu




MW-5000045-2

3. Select the menu by pressing the + or − key until the desired sub-menu is displayed. Confirm the selection by pressing the ↵ key.
4. Go back to the main display by pressing the ESC key.

## 5.2 Start-up

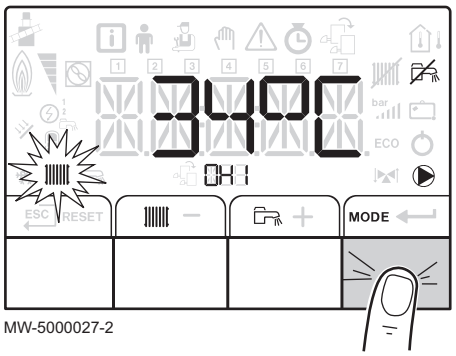
1. Switch on the outdoor unit and the indoor module simultaneously.
2. The heat pump begins its start-up cycle.
   If the start-up cycle runs normally, an automatic venting cycle is initiated. Otherwise, an error message is displayed.

## 5.3 Shutdown

### 5.3.1 Switching off the heating

**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

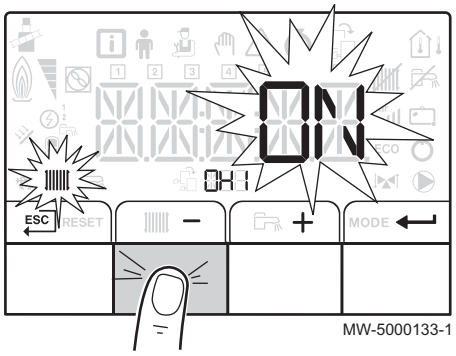
Fig.28 Selecting the shut-down mode




MW-5000027-2

1. Select the shut-down mode by pressing the **MODE** key twice.

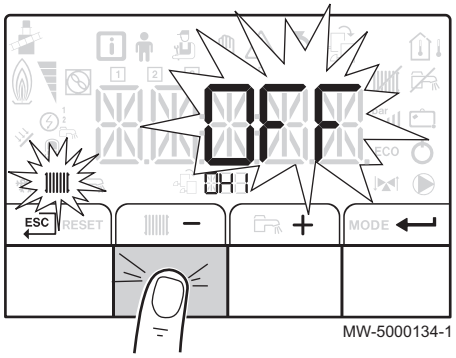
Fig.29 Confirming the heating mode




MW-5000133-1

2. Select heating mode by pressing the — key. Confirm by pressing the ⟵ key.

Fig.30 Confirmation of heating shut-down




MW-5000134-1

3. Select the heating shut-down pressing the — key. Confirm by pressing the ⟵ key. The screen displays **OFF**

**Note**
If you press the + key, the appliance starts up again (**ON** is displayed).

- The frost protection function continues to run.
- The heating has been shut down.

4. Go back to the main display by pressing the ESC key.

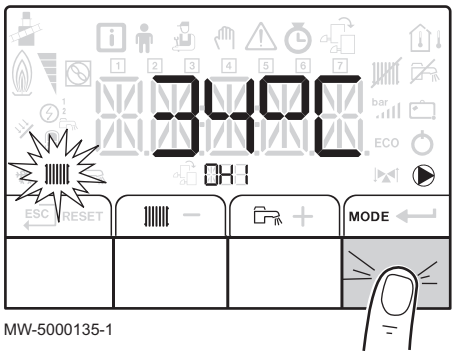
**Note**
The display disappears after a few seconds' inactivity.

### 5.3.2 Stopping domestic hot water production

**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

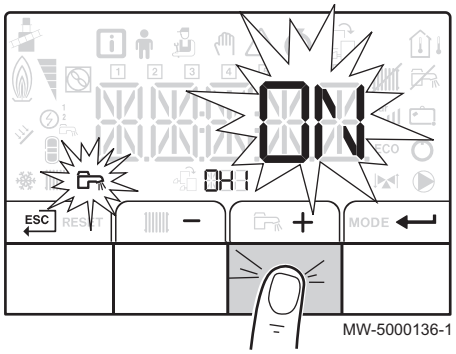
1. Select the shut-down mode by pressing the **MODE** key twice.

Fig.31 Selecting the shut-down mode



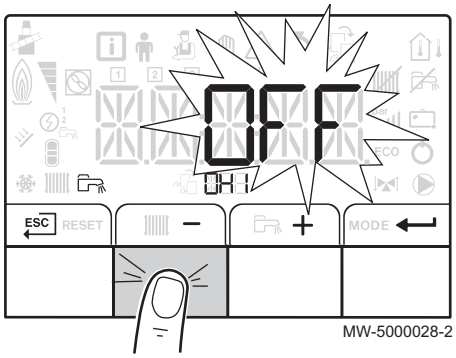

2. Select domestic hot water production mode pressing the + key. Confirm by pressing the ↵ key.

Fig.32 Confirming domestic hot water production mode




3. Select domestic hot water production shut-down by pressing the − key. Confirm by pressing the ↵ key.

Fig.33 Stopping domestic hot water production




**Note**
If you press the +key, the boiler starts up again (ON is displayed).

The frost protection function continues to run.
Production of domestic hot water has been shut down.

4. Go back to the main display by pressing the ESC key.

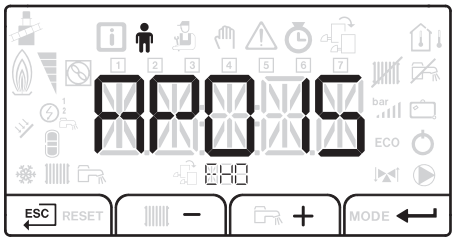
**Note**
The display disappears after a few seconds' inactivity.

### 5.3.3 Shutting down the cooling function

**Note**
The name of the PCB is displayed: check that it is actually the PCB on which the setting must be made.

1. Access the User menu.

Fig.34 Cooling function




MW-6000365-1

2. Select the **AP015** cooling parameter by pressing the + or − key and confirm by pressing the ↵ key.
3. Select cooling function shut-down by pressing the − key and confirm by pressing the ↵ key.
4. Go back to the main display by pressing the ESC key.

## 5.4 Frost Protection

If the temperature of the heating water in the heat pump falls too much, the integrated protection device switches itself on. This device functions as follows:

- If the water temperature is lower than 5°C, the circulating pump starts up.
- If the water temperature is lower than 3°C, the back-up starts up.
- If the water temperature is higher than 10°C, the back-up shuts down and the circulating pump continues to run for a short time.

The radiator valves in rooms where there is a risk of frost must be fully open.

# 6 Settings

## 6.1 List of parameters

### 6.1.1 Menu List

| | |
|---|---|
| | **Information** menu |
| | **User** menu |
| | **Installer** menu |
| | **Manual Forcing** menu |
| | **Failure** menu |
| | **Hour run meters** sub-menu<br>**Timer Program** sub-menu<br>**Clock** sub-menu |

### 6.1.2 Information Menu

Certain parameters are displayed:
- according to certain system configurations,
- according to the options, circuits or sensors actually connected.

Tab.15 List of parameters

| Parameters | Description | Unit |
|---|---|---|
| **AM012** | Status | |
| **AM014** | Sub-Status | |
| **HM001** | Heat pump flow temperature | °C |
| **HM002** | Heat pump return temperature | °C |
| **DM001** | Domestic hot water tank temperature - bottom position | °C |
| **DM006** | Domestic hot water tank temperature - bottom position | °C |
| **AM027** | Outside temperature | °C |
| **AM056** | Flow rate in the system | l/min |
| **PM002** | Heating temperature set point | °C |
| **PM001** | Calculated heating set point | °C |
| **AM019** | Hydraulic pressure | MPa (bar) |
| **AM010** | Pump rotation speed in comparison with maximum speed | % |
| **CM030** | Room temperature measured | °C |
| **CM190** | Desired room temperature set point | °C |

### 6.1.3 User menu

Certain parameters are displayed:
- according to certain system configurations,
- according to the options, circuits or sensors actually connected.

Tab.16 List of parameters

| Parameters | Description | Factory setting | Customer setting |
|---|---|---|---|
| **AP015** | Cooling mode operation:<br>• 0 = OFF<br>• 1 = ON | 0 | |

| Parameters | Description | Factory setting | Customer setting |
|---|---|---|---|
| AP016 | Central heating operation:<br>• 0 = OFF<br>• 1 = ON | 1 | |
| AP017 | Domestic hot water tank operation:<br>• 0 = OFF<br>• 1 = ON | 1 | |
| AP073 | SUMMER / WINTER set point switch:<br>• Can be set from 15 to 30 °C.<br>• Set to 30.5 °C = function deactivated | 22°C | |
| AP074 | SUMMER override:<br>• 0 = OFF<br>• 1 = ON | 0 | |
| CP040 | Post-operation time of the generator pump<br>Can be set from 0 to 20 minutes | 4 minutes | |
| CP071 | Room temperature set point in reduced mode<br>Can be set from 5 to 30°C. | 16°C | |
| CP072 | Room temperature set point in comfort mode<br>Can be set from 5 to 30°C. | 20°C | |
| CP073 | Not available on this version | | |
| CP074 | Not available on this version | | |
| CP075 | Not available on this version | | |
| CP076 | Not available on this version | | |
| CP140 | Set point cooling activity zone 1<br>Can be set from 20 to 30°C. | 30°C | |
| CP141 | Set point cooling activity zone 2<br>Can be set from 20 to 30°C. | 25°C | |
| CP142 | Set point cooling activity zone 3<br>Can be set from 20 to 30 °C. | 25 °C | |
| CP143 | Set point cooling activity zone 4<br>Can be set from 20 to 30°C. | 25 °C | |
| CP144 | Set point cooling activity zone 5<br>Can be set from 20 to 30 °C. | 25 °C | |
| CP145 | Set point cooling activity zone 6<br>Can be set from 20 to 30 °C. | 25 °C | |
| CP320 | Circuit operating mode:<br>• 0 = Timer program<br>• 1 = Manual<br>• 2 = Frost protection | 0 | |
| CP570 | Not available on this version | | |
| DP020 | Post-circulation time of the reversal valve after domestic hot water production:<br>• Can be set from 0 to 99 minutes<br>• Set to 99 = continuous running | 3 minutes | |
| DP060 | Number of timer programs selected for domestic hot water production mode<br>Can be set from 0 to 2 | 0 | |
| DP070 | Domestic hot water temperature set point in comfort mode<br>Can be set from 40 to 80 °C. | 54 °C | |
| DP080 | Domestic hot water temperature set point in reduced mode<br>Can be set from 10 to 60°C. | 10°C | |
| DP200 | Domestic hot water production mode:<br>• 0 = Program<br>• 1 = Manual<br>• 2 = Frost protection mode | 0 | |

| Parameters | Description | Factory setting | Customer setting |
|---|---|---|---|
| **HP062** | Cost of peak time electricity<br>Can be set from 1 to 250 (x € 0.01/kWh) | 13 | |
| **HP063** | Cost of off-peak electricity<br>Can be set from 1 to 250 (x € 0.01/kWh) | 9 | |
| **HP064** | Cost of fossil energy (oil or gas) - price per litre or per $m^3$<br>Can be set from 1 to 250 (x € 0.01/kWh) | 90 | |
| **AP103** | Display language | | |
| **AP104** | Display contrast | | |
| **AP105** | Temperature display unit (°C or °F) | °C | |

### 6.1.4 PCB parameters for the PCB + sensor kit for circuits with mixing valve

Certain parameters are displayed:
- according to certain system configurations,
- according to the options, circuits or sensors actually connected.

Tab.17 List of parameters accessible to the user

| Parameters | Description | Factory setting | Customer setting |
|---|---|---|---|
| **AP073** | SUMMER / WINTER set point switch:<br>• Can be set from 15 to 30°C<br>• Set to 30.5°C = function deactivated | 22°C | |
| **AP074** | SUMMER override:<br>• 0 = OFF<br>• 1 = ON | 0 | |
| **CP010** | Heating water flow temperature set point for the area heated<br>Can be set from 7 to 100°C. | 40°C | |
| **CP040** | Post-operation time of the generator pump<br>Can be set from 0 to 20 minutes | 4 minutes | |
| **CP071** | Room temperature set point in reduced mode<br>Can be set from 5 to 30°C. | 16°C | |
| **CP072** | Room temperature set point in comfort mode<br>Can be set from 5 to 30°C. | 20°C | |
| **CP320** | Circuit operating mode<br>• 0 = Timer program<br>• 1 = Manual<br>• 2 = Frost protection | 0 | |
| **CP350** | Not available on this version | | |
| **CP360** | Not available on this version | | |
| **CP540** | Swimming pool water temperature set point<br>• Can be set from 0 to 39°C<br>• Set to 0: frost protection operation | 20°C | |
| **CP570** | Not available on this version | | |

### 6.1.5 COUNTERS / TIME PROG / menus CLOCK

This menu contains the following sub-menus:
- **COUNTERS**
- **TIME PROG** : timer program
- **CLOCK**

## ■ Sub-menu COUNTERS

Tab.18 List of parameters

| Parameters | Description | Unit |
|---|---|---|
| DC002 | Number of reversal valve cycles | |
| DC003 | Number of hours' reversal valve operation | hours |
| PC002 | Number of burner start-ups in heating mode | |
| AC026 | Number of hours' pump operation | hours |
| AC027 | Number of pump start-ups | |
| AC005 | Consumption in heating mode | kWh |
| AC006 | Consumption in domestic hot water production mode | kWh |
| AC007 | Consumption in cooling mode | kWh |
| AC008 | Energy recovered in heating mode | kWh |
| AC009 | Energy recovered in domestic hot water mode | kWh |
| AC010 | Energy recovered in cooling mode | kWh |
| AC001 | Number of hours' operation | hours |
| AM033 | Service A, B or C or Custom | |
| AC003 | Number of hours' operation since the last service | hours |
| AC013 | Seasonal coefficient of performance | |

## ■ Sub-menu TIME PROG

Tab.19 List of parameters

| Parameters | Description | Factory setting | Customer setting |
|---|---|---|---|
| 1 | Timer program for Mondays | 06:00 - 22:00 | |
| 2 | Timer program for Tuesdays | 06:00 - 22:00 | |
| 3 | Timer program for Wednesdays | 06:00 - 22:00 | |
| 4 | Timer program for Thursdays | 06:00 - 22:00 | |
| 5 | Timer program for Fridays | 06:00 - 22:00 | |
| 6 | Timer program for Saturdays | 06:00 - 22:00 | |
| 7 | Timer program for Sundays | 06:00 - 22:00 | |

## ■ Sub-menu CLOCK

Tab.20 List of parameters

| Parameters | Description | Factory setting | Customer setting |
|---|---|---|---|
| **HOURS** | Time<br>Can be set from 0 to 23 | | |
| **MINUTE** | Minute<br>Can be set from 0 to 59 | | |
| **DATE** | Date<br>Can be set from 1 to 31 | | |
| **MONTH** | Month<br>Can be set from 1 to 12 | | |
| **YEAR** | Year<br>Can be set from 0000 to 2100 | | |

## 6.2 Setting the parameters

### 6.2.1 Modifying the User parameters

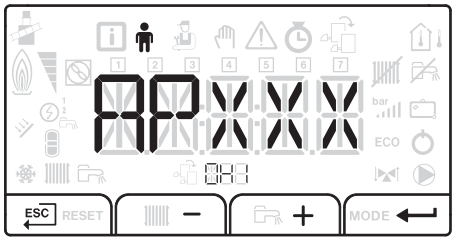
**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

The parameters in the User menu can be modified by the user to meet his central heating and domestic hot water comfort requirements.

**Caution**
Modification of the factory settings may impair operation of the appliance.

1. Access the User menu.
2. Select the desired parameter by pressing + or − to scroll through the list of parameters that can be adjusted.
3. Confirm the selection by pressing ↵.
4. Modify the value of the parameter by pressing + or −.
5. Confirm the new value of the parameter by pressing ↵.
6. Go back to the main display by pressing ESC.

Fig.35 Displaying the User menu



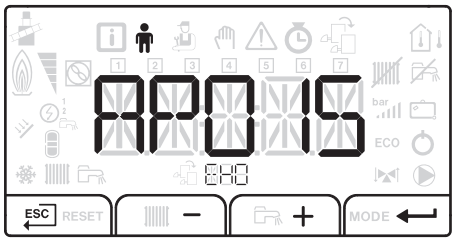

MW-5000040-3

### 6.2.2 Activating the cooling function

**Note**
The name of the PCB is displayed: check that it is actually the PCB on which the setting must be made.

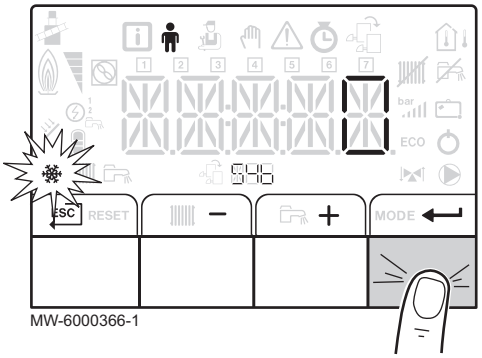
1. Access the User menu.
2. Select the **AP015** cooling parameter by pressing the + or − key and confirm by pressing the ↵ key.

Fig.36 Cooling function




MW-6000365-1

Fig.37 Confirmation



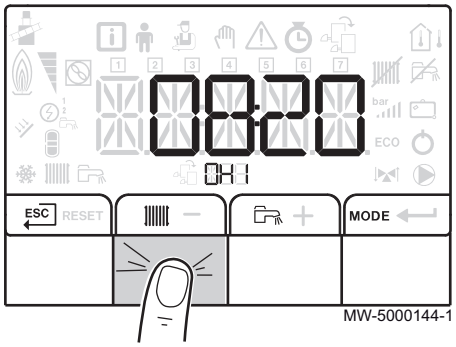

MW-6000366-1

3. Select cooling function shut-down by pressing the + key and confirm by pressing the ↵ key.
4. Go back to the main display by pressing ESC.

### 6.2.3 Setting the heating

**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

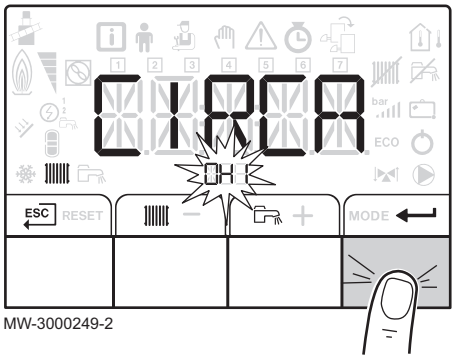
Fig.38 Accessing the heating parameters




1. Access the heating shut-down pressing the key twice.

**Note**
If no outside temperature sensor is connected, this menu can be used to set the temperature of the heating water.
If an outside temperature sensor is connected, this menu can be used to set the set point.

Fig.39 Confirming the heating circuit



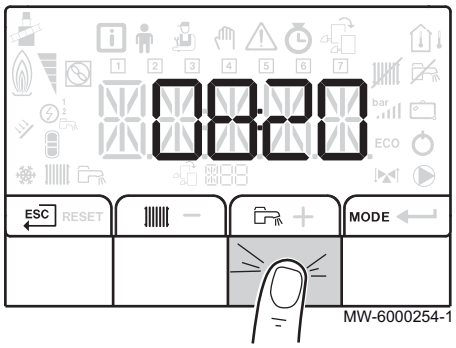

2. Display the parameters for the desired circuit by pressing the + or − key. Confirm by pressing the ⟵ key.
   The name of the circuit and the heating water temperature set point are displayed alternately.
3. Access setting of the heating water temperature set point by pressing the ⟵ key.
4. Set the heating water temperature set point by pressing + or − key.
5. Confirm the new temperature set point by pressing the ⟵ key.

**Note**
Press the ESC key to cancel all input.

### 6.2.4 Setting the domestic hot water temperature

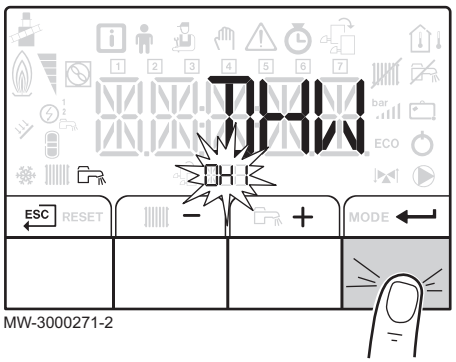
**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

Fig.40 Accessing the domestic hot water production parameters




1. Access the domestic hot water production parameters by pressing the key twice.

Fig.41 Confirmation of the domestic hot water circuit



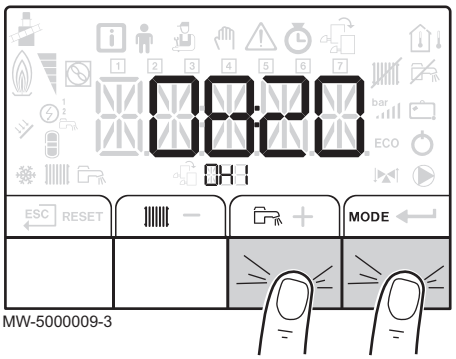

2. Display the domestic hot water production circuit parameters by pressing the ⟵ key.
   The name of the circuit and the domestic hot water temperature set point are displayed alternately.
3. Access setting of the domestic hot water temperature set point by pressing the ⟵ key.
4. Set the domestic hot water temperature set point by pressing + or − key.
5. Confirm the new temperature set point by pressing the ⟵ key.

**Note**
Press the ESC key to cancel all input.

### 6.2.5 Activating Manual Forcing

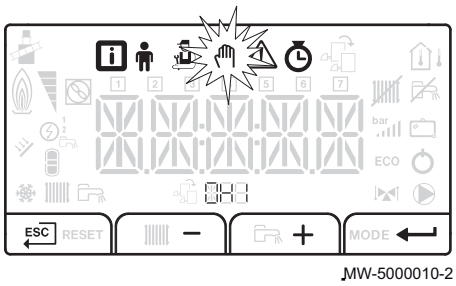
**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

Fig.42 Accessing the menus




1. Access the menus by pressing the two keys on the right simultaneously.

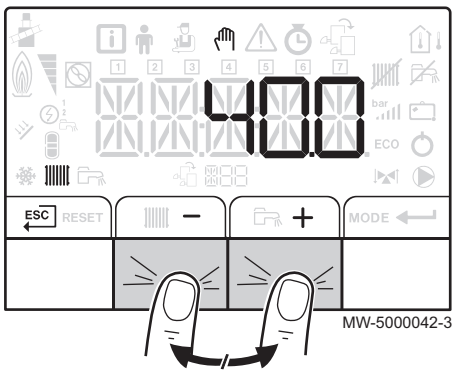
Fig.43 Accessing Manual Forcing




2. Access Manual Forcing by pressing the + or − key. Confirm by pressing the ⟵ key.

**Note**
Manual Forcing is available only when the icon flashes.

Fig.44 Setting the set point

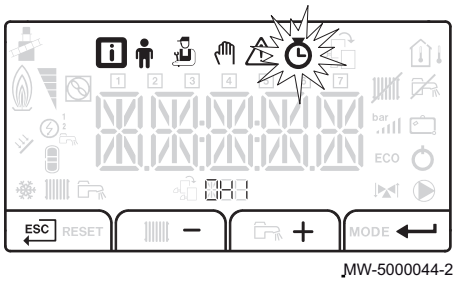



3. Set the value of the heating water temperature set point by pressing + or − key. Confirm by pressing the ⟵ key.
4. Go back to the main display by pressing the ESC key.

### 6.2.6 Setting the timer program

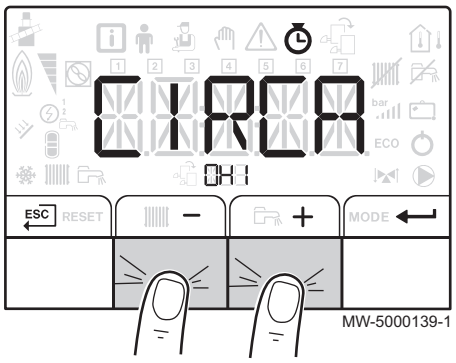
**Note**
The name of the PCB is displayed. Check that it is actually the PCB on which the setting must be made.

Fig.45 Accessing the Hour Run Meters / Timer Program / Clock menus




1. Access the Hour Run Meters / Timer Program / Clock menus.
2. Select the Timer Program sub-menu by pressing the + or − key. Confirm by pressing the ↵ key.

Fig.46 Selecting the circuit

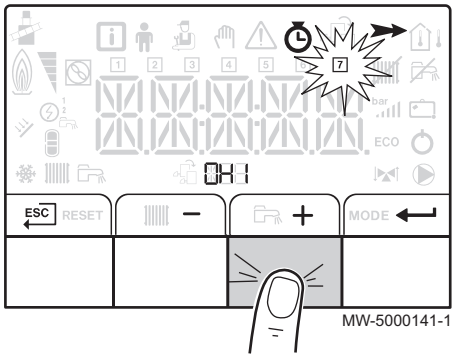



3. Select the circuit by pressing the + or − key. Confirm by pressing the ↵ key.

**Note**
At least two circuits are available:
- Heating
- Domestic hot water: **DHW**

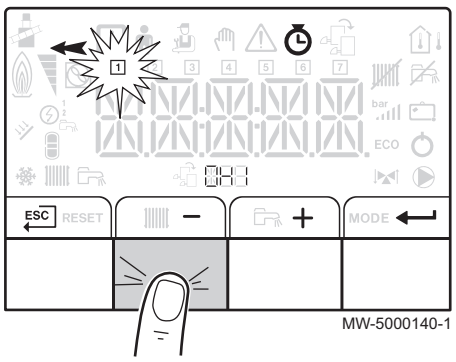
The icons dedicated to the days of the week all flash at the same time: 1 2 3 4 5 6 7

Fig.47 Selecting the day




4.

Fig.48 Selecting the day



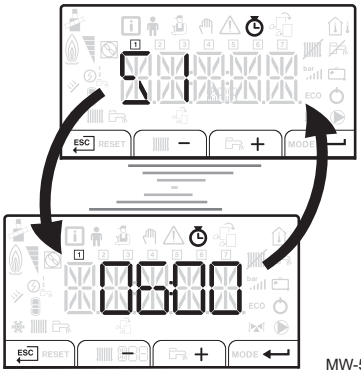

Select the desired day number by pressing the + or − key until the icon dedicated to the desired day flashes. Confirm by pressing the ↵ key.

| Day selected | Description |
|---|---|
| 1, 2, 3, 4, 5, 6, 7 | every day of the week |
| 1 | Monday |
| 2 | Tuesday |
| 3 | Wednesday |
| 4 | Thursday |
| 5 | Friday |
| 6 | Saturday |
| 7 | Sunday |

**Note**
The + key is used to move to the right.

**Note**
The − key is used to move to the left.

Fig.49 Setting the time

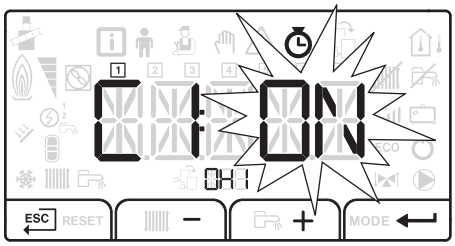



MW-5000142-1

5. Set the start time for the period **S1** by pressing the + or − key. Confirm by pressing the ↵ key.

**Note**
No setting: 10 minutes
The **END** setting determines the end time.

Fig.50 Selecting the status




MW-5000143-1

6. Select status **C1** corresponding to the **S1**period by pressing the + or − key. Confirm by pressing the ↵ key.

| Statuses C1 to C6 for the periods S1 to S6 | Description |
|---|---|
| ON | comfort mode activated |
| OFF | reduced mode activated |

7. Repeat steps 3 to 5 to define the comfort periods **S1** to **S6** and the associated **C1** statuses to **C6**
8. Go back to the main display by pressing the ESC key.

**Example:**

| Times | S1 | C1 | S2 | C2 | S3 | C3 | S4 | C4 | S5 | C5 | S6 | C6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06:00-22:00 | 06:00 | **ON** | 22:00 | **OFF** | **END** | | | | | | | |
| 06:00-08:00<br>11:30-13:30 | 06:00 | **ON** | 08:00 | **OFF** | 11:30 | **ON** | 13:30 | **OFF** | **END** | | | |
| 06:00-08:00<br>11:30-14:00<br>17:30-22:00 | 06:00 | **ON** | 08:00 | **OFF** | 11:30 | **ON** | 14:00 | **OFF** | 17:30 | **ON** | 22:00 | **OFF** |

# 7 Maintenance

## 7.1 Troubleshooting

**Caution**
All work on the refrigeration circuit must be done by a qualified professional, according to prevailing codes of practice and safety in the profession (recovery of the refrigerant, brazing under nitrogen). All brazing work must be done by qualified welders.

**Caution**
This appliance is fitted with pressurised equipment, including the refrigeration pipes.

**Caution**
Use only original parts to replace a defective refrigeration component.

**Caution**
Use only dehydrated nitrogen for detecting leaks or for pressurised tests.

**Caution**
The safety devices may only be set, corrected or replaced by a qualified professional.

## 7.2 General

Maintenance operations are important for the following reasons:

- To guarantee optimum performance.
- To extend the life of the equipment.
- To provide an installation which offers the customer optimum comfort over time.

**Caution**
Maintenance work must be carried out by a qualified professional.

**Danger**
Before any work, switch off the mains electricity to the heat pump and the hydraulic or electrical back-up if connected.

**Caution**
Before working on the refrigeration circuit, switch off the appliance and wait a few minutes. Certain items of equipment such as the compressor and the pipes can reach temperatures in excess of 100°C and high pressures, which may cause serious injuries.

**Caution**
Do not drain the installation, except in cases of absolute necessity. E.g.: several months' absence with the risk of temperatures in the building falling below freezing.

## 7.3 Standard inspection and maintenance operations

An annual inspection with tightness check is obligatory. Schedule a service by a qualified professional at a cold time of the year to check the following points:

1. Have a qualified professional check that the installation is performing correctly at each periodic service.
2. Have a qualified professional check the heat output by measuring the difference in temperature between heating flow and return.
3. Have a qualified professional check the safety thermostat settings.

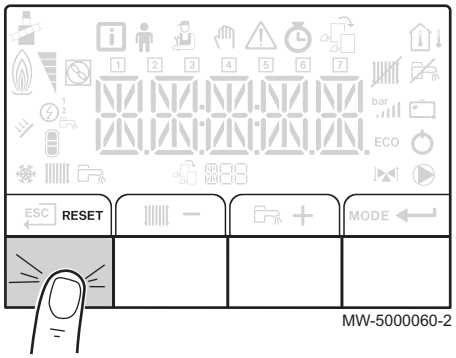
## 7.4 Cleaning the casing

1. Clean the outside of the appliance using a damp cloth and a mild detergent.

# 8 Troubleshooting

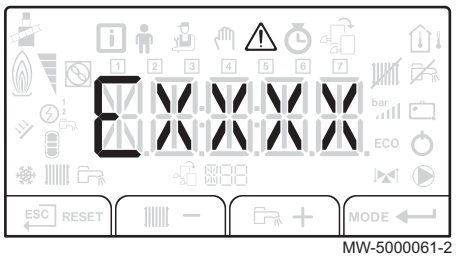
## 8.1 Error messages

Fig.51 Restarting the appliance




1. Press **RESET** for 3 seconds to restart the appliance.

Fig.52 Error code display




**Note**
The previous codes are displayed alternately.

In economy mode, the appliance will not run a domestic hot water heating cycle after a central heating cycle.

2. Briefly press the ↵ key to display the current operating status on the screen.

### 8.1.1 Error codes

An error code is a temporary boiler status, resulting from the detection of an anomaly.

Tab.21 List of alerts

| Error code | Message | Description |
|---|---|---|
| W4 | WATPRESSURE WARNING | Water pressure in the installation lower than the minimum pressure |
| W5 | SYSTEM FLOW RATE ALERT | Flow rate in the installation lower than the minimum flow rate |

Tab.22 List of lock-downs

| Code | Message | Description | Check |
|---|---|---|---|
| B00 | PARAME-TER ERROR | Incorrect parameter configu-ration | Contact the professional responsible for maintenance of the heat pump |
| B02 | TOTAL LOCK-DOWN | The **BL** input on the terminal block in the **EHC-02** PCB is open | Contact the professional responsible for maintenance of the heat pump |
| B03 | PARTIAL LOCK-DOWN | The **BL** input on the terminal block in the **EHC-02** PCB is open | Contact the professional responsible for maintenance of the heat pump |
| B05 | WATER PRESSURE S OPEN | Error on the water pressure sensor | Contact the professional responsible for maintenance of the heat pump |
| B06 | WATER PRESSURE S CLOSED | Error on the water pressure sensor | Contact the professional responsible for maintenance of the heat pump |
| B09 | CONFIG ER-ROR | The hybrid system has not been configured | Contact the professional responsible for maintenance of the heat pump |

| Code | Message | Description | Check |
|---|---|---|---|
| B10 | PSU | Internal error | Contact the professional responsible for maintenance of the heat pump |
| B11 | AWAITING CONFIGU-RATION NUMBER | The hybrid system has not been configured | Contact the professional responsible for maintenance of the heat pump |
| B13 | DHW T OPEN | Bottom domestic hot water temperature sensor defec-tive | Contact the professional responsible for maintenance of the heat pump |
| B14 | DHW T CLOSED | Bottom domestic hot water temperature sensor defec-tive | Contact the professional responsible for maintenance of the heat pump |
| B18 | RESET RUNNING | Reset under way | |
| B19 | HEAT PUMP FL T OPEN | Heat pump flow temperature sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B20 | HEAT PUMP FL T CLOSED | Heat pump flow temperature sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B24 | SYSTEM FLOW RATE ERROR | Insufficient flow rate | Contact the professional responsible for maintenance of the heat pump |
| B26 | FL T OPEN | Hybrid system flow sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B27 | FL T CLOSED | Hybrid system flow sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B29 | OUTSIDE T OPEN | Outside temperature sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B30 | OUTSIDE T CLOSED | Outside temperature sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B33 | HEAT PUMP RET T OPEN | Heat pump return tempera-ture sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B34 | HEAT PUMP RET T CLOSED | Heat pump return tempera-ture sensor defective | Contact the professional responsible for maintenance of the heat pump |
| B37 | TOP DHW S OPEN | Top domestic hot water temperature sensor defec-tive | Contact the professional responsible for maintenance of the heat pump |
| B38 | TOP DHW S CLOSED | Top domestic hot water temperature sensor defec-tive | Contact the professional responsible for maintenance of the heat pump |
| B42 | WATER PRESSURE ERROR | Pressure lower than the minimum pressure | Contact the professional responsible for maintenance of the heat pump |
| B43 | HEAT PUMP FAULT | Heat pump outdoor unit de-fective. | Contact the professional responsible for maintenance of the heat pump |
| B44 | FUNCTION-AL DEVICE DISCON-NECTED | No communication with the PCB SMS-04 | Contact the professional responsible for maintenance of the heat pump |
| B45 | NON-CRITI-CAL DEVICE DISCON-NECTED | No communication with the PCB SMS-04 | Contact the professional responsible for maintenance of the heat pump |

Tab.23 List of errors

| Code | Message | Description | Check |
|---|---|---|---|
| E39 | LOCK-DOWN IN-PUT | The BL input opened for a short period of time | Contact the professional responsible for maintenance of the heat pump |
| E53 | SYSTEM FLOW LOCK-DOWN | Heating water flow rate too low | Contact the professional responsible for maintenance of the heat pump |

### 8.1.2 PCB error codes on the PCB + sensor kit for circuits with mixing valve

An error code is a temporary boiler status, resulting from the detection of an anomaly.

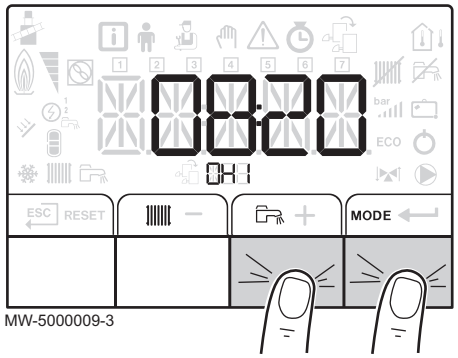
The control panel attempts automatic restart of the boiler until it ignites.

Tab.24 List of error codes

| Error code | Message | Description |
|---|---|---|
| **B00** | **PARAMETER ERROR** | Bad configuration of the PCB parameters |
| **B17** | **CONFIGURATION ERROR** | Boiler not configured: the **CU** PCB has been changed |
| **B18** | **PSU** | Memory error:<br>• Software change (software number or version parameter inconsistent with the memory) |
| **B19** | **WAITING FOR CONFIGURATION NUMBER** | Boiler not configured: the **CU** PCB has been changed |
| **B25** | **SENS T OUTSIDE CLOSED**<br>**SENS T OUTSIDE OPEN** | No outside sensor:<br>• Bad connection:<br>- Check the wiring between the **CU** PCB and the sensor<br>- Check whether the outside sensor has been correctly fitted<br>• Sensor failure:<br>- Check the Ohmic value of the sensor<br>- Replace the sensor if necessary |
| **B27** | **SENS DHW OPEN**<br>**SENS DHW CLOSED** | No domestic hot water sensor:<br>• Bad connection:<br>- Check the wiring between the **CU** PCB and the sensor<br>- Check that the sensor has been correctly fitted<br>• Sensor failure:<br>- Check the Ohmic value of the sensor<br>- Replace the sensor if necessary |
| **B28** | RESET IN PROGRESS | Reset under way |
| **B33** | **SENS T FLOW OPEN** | Boiler flow sensor on an open circuit:<br>• Bad sensor connection:<br>- Check the wiring between the **CU** PCB and the sensor<br>- Check that the sensor has been correctly fitted<br>• Sensor failure:<br>- Check the Ohmic value of the sensor<br>- Replace the sensor if necessary |
| **B100** | **FUNCTION UNAVAILABLE** | Function not available in the control system:<br>• Bad parameter setting |

## 8.2 Error history

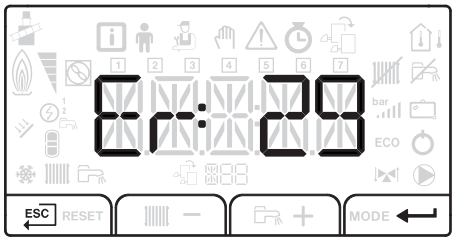
Fig.53 Accessing the menus




MW-5000009-3

1. Access the menu level by pressing the two keys on the right simultaneously.

Fig.54 Accessing the Failure menu




MW-5000043-1

2. Select the Failure menu by pressing the ⟵ key.
3. Press the + or − key to scroll through the error code history.
4. Press the ⟵ key to access the details of the error code displayed.

## 8.3 Troubleshooting

| Problems | Probable causes | Corrections |
|---|---|---|
| The radiators are cold. | The heating set point temperature is too low. | Increase the value of parameter or, if a room thermostat is connected, increase the temperature on it. |
| | The heating mode is deactivated. | Activate the heating mode. |
| | The radiator valves are closed. | Open the valves on all radiators connected to the heating system. |
| | The heat pump is not operating. | • Check that the heat pump is switched on.<br>• Check the fuses and switches on the electrical installation. |
| | The water pressure is too low (< 1 bar). | Top up the installation with water. |
| There is no domestic hot water. | The domestic hot water set point temperature is too low. | Increase the value of parameter . |
| | The domestic hot water mode is deactivated. | Activate the domestic hot water mode. |
| | The appliance is in reduced domestic hot water mode | Check and modify the comfort and reduced time ranges for the domestic hot water. |
| | The energy-saving shower head is restricting the water flow. | Clean the shower head; replace it if necessary. |
| | The heat pump is not operating. | • Check that the heat pump is switched on.<br>• Check the fuses and switches on the electrical installation. |
| | The water pressure is too low (< 1 bar). | Top up the installation with water. |
| Significant variations in domestic hot water temperature | Insufficient water supply | • Check the water pressure in the installation.<br>• Open the valve. |
| | The domestic hot water hysteresis is too high | Lower the value of the hysteresis parameter in the installer menu |

| Problems | Probable causes | Corrections |
|---|---|---|
| The heat pump does not work. | The heating set point temperature is too low. | Increase the value of parameter or, if a room thermostat is connected, increase the temperature on it. |
| | The heat pump is not operating. | • Check that the heat pump is switched on.<br>• Check the fuses and switches on the electrical installation. |
| | The water pressure is too low (< 1 bar). | Top up the system with water. |
| | An error code appears on the display. | Correct the error if possible. |
| The heat pump runs short-cycling in domestic hot water mode | The temperature set point is too low | Increase the set point |
| The water pressure is too low (< 1 bar). | Not enough water in the installation. | Top up the system with water. |
| | Water leak. | Contact the installer. |
| Clicking in the central heating pipes<br>. | The central heating pipe clamps are too tight. | Contact the installer. |
| | There is air in the heating pipes. | It is essential that you vent any air in the domestic hot water tank, the pipes and the taps to prevent the annoying noises likely to be produced during heating or when drawing off water. |
| | The water is circulating too quickly in the central heating system. | Contact the installer. |
| Significant water leak underneath or in the vicinity of the heat pump. | The pipes on the heat pump or the central heating are damaged. | Contact the installer. |

# 9 Decommissioning

## 9.1 Decommissioning procedure

To decommission the heat pump temporarily or permanently:

1. Contact the installer.

# 10 Disposal

## 10.1 Disposal and Recycling

Fig.55 Recycling

MW-3000179-03

**Warning**
Removal and disposal of the heat pump must be carried out by a qualified professional in accordance with prevailing local and national regulations.

1. Switch off the heat pump.
2. Cut the mains supply to the heat pump.
3. Recover the refrigerant fluid in accordance with prevailing regulations

**Note**
Do not allow the refrigerant fluid to escape into the atmosphere.

4. Disconnect the refrigeration connections.
5. Close the water mains.
6. Drain the installation.
7. Dismantle all hydraulic connections.
8. Dismantle the heat pump.
9. Scrap or recycle the heat pump in accordance with prevailing local and national regulations.

# 11 Environmental

## 11.1 Energy savings

Tips on saving energy:
- Do not block ventilation outlets.
- Do not cover the radiators. Do not hang curtains in front of the radiators.
- Install reflective panels behind the radiators to prevent heat losses.
- Insulate the pipes in rooms that are not heated (cellars and lofts).
- Turn off the radiators in rooms not being used.
- Do not run hot (or cold) water pointlessly.
- Install a water-saving shower head to save up to 40% energy.
- Take showers rather than baths. A bath consumes twice as much water and energy.

# 12 Warranty

## 12.1 General

We would like to thank you for buying one of our appliances and for your trust in our product.

In order to ensure continued safe and efficient operation we recommend that the product is regularly inspected and maintained.

Your installer and our service department can assist with this.

## 12.2 Terms of warranty

This appliance comes with a warranty that covers all manufacturing faults; the warranty period will commence on the date of purchase stated on the installer's invoice.

As a manufacturer, we can by no means be held liable if the appliance is used incorrectly, is poorly maintained or not maintained at all, or is not installed correctly (it is your responsibility to ensure that installation is carried out by a qualified installer).

In particular, we cannot be held liable for material damage, intangible losses or physical injury resulting from an installation that does not comply with:

- Legal or regulatory requirements or provisions laid down by the local authorities,
- National or local regulations and special provisions relating to the installation,
- Our manuals and installation instructions, in particular in terms of regular maintenance of the appliances,

Our warranty does not cover replacement or repair costs for parts that may become defective due to normal wear, incorrect usage, the intervention of unqualified third parties, inadequate or insufficient supervision or maintenance, a mains supply that is not appropriate or the use of unsuitable or poor quality fuel.

Smaller parts, such as motors, pumps, electrical valves etc., are guaranteed only if these parts have never been dismantled.

The rights established in European Directive 99/44/EEC, implemented by legal decree No. 24 of 2 February 2002 and published in Official Journal No. 57 of 8 March 2002, remain in force.

# 13 Appendix

## 13.1 Product data sheet

Tab.25 Product data sheet for heat pump combination heaters

| | | MIV-4 AWHP 4 MR | MIV-4 AWHP 6 MR-2 | MIV-4 AWHP 8 MR-2 |
|---|---|---|---|---|
| Space heating - Temperature application | | Medium | Medium | Medium |
| Water heating - Declared load profile | | L | L | L |
| Seasonal space heating energy efficiency class under average climate conditions | | A++ | A++ | A++ |
| Water heating energy efficiency class under average climate conditions | | A | A | A |
| Rated heat output under average climate conditions *(Prated or Psup)* | kW | 3 | 4 | 6 |
| Space heating - Annual energy consumption under average climate conditions | kWh<br>GJ(1) | 1489 | 2124 | 3316 |
| Water heating - Annual energy consumption under average climate conditions | kWh<br>GJ(1) | 968 | 968 | 968 |
| Seasonal space heating energy efficiency under average climate conditions | % | 150 | 137 | 136 |
| Water heating energy efficiency under average climate conditions | % | 106.00 | 106.00 | 106.00 |
| Sound power level $L_{WA}$ indoors(2) | dB | 53 | 53 | 53 |
| Ability to off-peak hours functioning(2) | | No | No | No |
| Rated heat output, under **colder - warmer** climate conditions | kW | 3 – 3 | 4 – 5 | 6 – 6 |
| Space heating - Annual energy consumption, under **colder - warmer** climate conditions | kWh<br>GJ(1) | 2757 – 887 | 3721 – 1492 | 4621 – 1904 |
| Water heating - Annual energy consumption, under **colder - warmer** climate conditions | kWh(3)<br>GJ(1)(4) | 1432 – 664 | 1432 – 664 | 1432 – 664 |
| Seasonal space heating energy efficiency, under **colder - warmer** climate conditions | % | 120 – 195 | 116 – 172 | 119 – 169 |
| Water heating energy efficiency, under **colder - warmer** climate conditions | % | 72.00 – 154.00 | 72.00 – 154.00 | 72.00 – 154.00 |
| Sound power level $L_{WA}$ outdoors | dB | 64 | 65 | 65 |

(1) For gas heat pumps only
(2) If applicable.
(3) Electricity
(4) Fuel

Tab.26 Product fiche for heat pump combination heaters

| | | MIV-4 AWHP 11 MR-2 | MIV-4 AWHP 16 MR-2 |
|---|---|---|---|
| Space heating - Temperature application | | Medium | Medium |
| Water heating - Declared load profile | | L | L |
| Seasonal space heating energy efficiency class under average climate conditions | | A++ | A++ |
| Water heating energy efficiency class under average climate conditions | | A | A |
| Rated heat output under average climate conditions *(Prated or Psup)* | kW | 6 | 8 |
| Space heating - Annual energy consumption under average climate conditions | kWh<br>GJ(1) | 3783 | 5184 |

| | | MIV-4 AWHP 11 MR-2 | MIV-4 AWHP 16 MR-2 |
|---|---|---|---|
| Water heating - Annual energy consumption under average climate conditions | kWh GJ(5) | 968 | 968 |
| Seasonal space heating energy efficiency under average climate conditions | % | 132 | 130 |
| Water heating energy efficiency under average climate conditions | % | 106.00 | 106.00 |
| Sound power level $L_{WA}$ indoors(2) | dB | 53 | 53 |
| Ability to off-peak hours functioning(6) | | No | No |
| Rated heat output, under **colder - warmer** climate conditions | kW | 4 – 8 | 7 – 13 |
| Space heating - Annual energy consumption, under **colder - warmer** climate conditions | kWh GJ(5) | 3804 – 2580 | 5684 – 4120 |
| Water heating - Annual energy consumption, under **colder - warmer** climate conditions | kWh(3) GJ(5)(4) | 1432 – 664 | 1432 – 664 |
| Seasonal space heating energy efficiency, under **colder - warmer** climate conditions | % | 113 – 167 | 113 – 161 |
| Water heating energy efficiency, under **colder - warmer** climate conditions | % | 72.00 – 154.00 | 72.00 – 154.00 |
| Sound power level $L_{WA}$ outdoors | dB | 69 | 69 |

(1) For gas heat pumps only
(2) If applicable.
(3) Electricity
(4) Fuel

**See**
For specific precautions on assembly, installation and maintenance: see the chapter on Safety Instructions.

## 13.2 Product data sheet - Temperature controls

Tab.27 Product data sheet for the Temperature controls

| | | IniControl 2 |
|---|---|---|
| Class | | II |
| Contribution to space heating energy efficiency | % | 2 |

## 13.3 Package fiche

**Note**
'Medium-temperature application' means an application where the heat pump space heater or heat pump combination heater delivers its declared capacity for heating at an indoor heat exchanger outlet temperature of 55 °C.

Fig.56 Package fiche for medium-temperature heat pumps indicating the space heating energy efficiency of the package

**Seasonal space heating energy efficiency of heat pump**

(1) ‘I’ %

**Temperature control**

from fiche of temperature control

Class I = 1%, Class II = 2%, Class III = 1.5%, Class IV = 2%, Class V = 3%, Class VI = 4%, Class VII = 3.5%, Class VIII = 5%

\+ (2) %

**Supplementary boiler**

from fiche of boiler

Seasonal space heating energy efficiency (in %)

( ) - ‘I’ ) x ‘II’ = ± (3) %

**Solar contribution**

from fiche of solar device

Collector size (in m²) | Tank volume (in m³) | Collector efficiency (in %) | Tank rating (1): A* = 0.95, A = 0.91, B = 0.86, C = 0.83, D - G = 0.81

(‘III’ x ) + (‘IV’ x ) x 0.45 x ( /100) x = + (4) %

(1) If tank rating is above A, use 0.95

**Seasonal space heating energy efficiency of package under average climate**

(5) %

**Seasonal space heating energy efficiency class of package under average climate**

| G | F | E | D | C | B | A | A+ | A++ | A+++ |
|---|---|---|---|---|---|---|---|---|---|
| <30% | ≥30% | ≥34% | ≥36% | ≥75% | ≥82% | ≥90% | ≥98% | ≥125% | ≥150% |

**Seasonal space heating energy efficiency under colder and warmer climate conditions**

**Colder:** (5) - ‘V’ = %

**Warmer:** (5) + ‘VI’ = %

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as this efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

AD-3000745-01

I The value of the seasonal space heating energy efficiency of the preferential space heater, expressed in %.

II The factor for weighting the heat output of preferential and supplementary heaters of a package as set out in the following table.

III The value of the mathematical expression: 294/(11 · Prated), whereby ‘Prated’ is related to the preferential space heater.

IV The value of the mathematical expression 115/(11 · Prated), whereby ‘Prated’ is related to the preferential space heater.

V The value of the difference between the seasonal space heating energy efficiencies under average and colder climate conditions, expressed in %.

VI The value of the difference between the seasonal space heating energy efficiencies under warmer and average climate conditions, expressed in %.

Tab.28 Weighting of medium temperature heat pumps

| Prated / (Prated + Psup)[1][2] | II, package without hot water storage tank | II, package with hot water storage tank |
|---|---|---|
| 0 | 1.00 | 1.00 |
| 0.1 | 0.70 | 0.63 |
| 0.2 | 0.45 | 0.30 |
| 0.3 | 0.25 | 0.15 |
| 0.4 | 0.15 | 0.06 |
| 0.5 | 0.05 | 0.02 |
| 0.6 | 0.02 | 0 |
| ≥ 0.7 | 0 | 0 |

(1) The intermediate values are calculated by linear interpolation between the two adjacent values.
(2) Prated is related to the preferential space heater or combination heater.

Tab.29 Package efficiency (temperature regulator + heat pump)

| | | MIV-4 AWHP 4 MR | MIV-4 AWHP 6 MR-2 | MIV-4 AWHP 8 MR-2 | MIV-4 AWHP 11 MR-2 | MIV-4 AWHP 16 MR-2 |
|---|---|---|---|---|---|---|
| IniControl 2 | % | 152 | 139 | 138 | 134 | 132 |

## 13.4 Package fiche - Combination heaters (boilers or heat pumps)

Fig.57 Package fiche for combination heaters (boilers or heat pumps) indicating the water heating energy efficiency of the package

**Water heating energy efficiency of combination heater**

(1) ‘I’ %

Declared load profile: ☐

**Solar contribution**

from fiche of solar device

Auxiliary electricity

(2) **(1.1 x ‘I’ - 10%) x ‘II’ - ‘III’ - ‘I’ = +** ☐ %

**Water heating energy efficiency of package under average climate**

(3) ☐ %

**Water heating energy efficiency class of package under average climate**

| | G | F | E | D | C | B | A | A+ | A++ | A+++ |
|---|---|---|---|---|---|---|---|---|---|---|
| ☐ M | <27% | ≥27% | ≥30% | ≥33% | ≥36% | ≥39% | ≥65% | ≥100% | ≥130% | ≥163% |
| ☐ L | <27% | ≥27% | ≥30% | ≥34% | ≥37% | ≥50% | ≥75% | ≥115% | ≥150% | ≥188% |
| ☐ XL | <27% | ≥27% | ≥30% | ≥35% | ≥38% | ≥55% | ≥80% | ≥123% | ≥160% | ≥200% |
| ☐ XXL | <28% | ≥28% | ≥32% | ≥36% | ≥40% | ≥60% | ≥85% | ≥131% | ≥170% | ≥213% |

**Water heating energy efficiency under colder and warmer climate conditions**

**Colder:** (3) ☐ **- 0.2 x** (2) ☐ **=** ☐ **%**

**Warmer:** (3) ☐ **+ 0.4 x** (2) ☐ **=** ☐ **%**

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as this efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

AD-3000747-01

**I** The value of the water heating energy efficiency of the combination heater, expressed in %.

**II** The value of the mathematical expression $(220 \cdot Q_{ref})/Q_{nonsol}$, where $Q_{ref}$ is taken from Regulation EU 811/2013, Annex VII Table 15 and $Q_{nonsol}$ from the product fiche of the solar device for the declared load profile M, L, XL or XXL of the combination heater.

**III** The value of the mathematical expression $(Q_{aux} \cdot 2{,}5)/(220 \cdot Q_{ref})$, expressed in %, where $Q_{aux}$ is taken from the product fiche of the solar device and $Q_{ref}$ from Regulation EU 811/2013, Annex VII Table 15 for the declared load profile M, L, XL or XXL.

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CE

De Dietrich
DE DIETRICH THERMIQUE
57, rue de la Gare F- 67580 MERTZWILLER - BP 30

PART OF BDR THERMEA

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